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An Economic Theory of Institutional Change: Induced and Imposed Change

Justin Yifu Lin

Introduction

This article draws on recent progress in economics—especially in the economics of information, property rights, transaction costs, induced innovations, household production, and the theory of the state—to analyze the functions and choices of social institutions, and to consider the mechanism of institutional change. My purpose is to show that institutions provide useful services and that institutional choices and changes can be analyzed within the demand and supply framework. Special attention will be given to the role of the state in the process of institutional change.

The study of institutions and their evolution is one of the focal points of Marxist economics. In contrast, conventional neoclassical economics takes the institutions of the modern Western economies for granted (Sweezy 1970). In the construction of economic models, well-defined property rights, perfect information, and frictionless transactions are in general implicitly assumed. With some additional assumptions about the characteristics of production and utility functions, which are termed the "classical environment,"[1] the two well-known optimality theorems of welfare economics are shown to be attainable in the market economy. First, if there is perfect competition, the allocation of resources is Pareto-optimal. Second, any spec-

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[1]The assumptions include the absence of external economies and diseconomies of scale, perfect divisibility of goods, convexity of the relevant sets and functions describing preferences and technology, and certain other mathematical features. Hurwicz (1972) labels these assumptions the "classical environment."

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ified Pareto-optimal resource allocation that is technically feasible can be achieved by establishing free markets and an appropriate pattern of factor ownership. In this context, a firm is merely a synonym for a production function (Williamson 1980). Moreover, since the market is viewed as the most efficient mechanism for allocating resources, alternative institutional arrangements are irrelevant. Government interventions are warranted only when market failures occur due to the violation of the "classical" environment.

Nevertheless, in real-world economies different institutions exist side by side with the market. The large, modern hierarchical business enterprise, for example, competes with the market as alternative institution in coordinating production and allocating resources. Indeed, as an institutional innovation, the modern hierarchical business enterprise was one of the major sources of economic growth in the United States, [2] and this innovation cannot simply be attributed to the desire for extending monopoly power (Williamson 1975). The government is also far from the "minimal state," which is limited to the functions of providing law and order, and protecting property rights. Different institutions are competing in the institutional market. As noted by Theodore Schultz (1968, p. 1114), "It is obvious that particular institutions really matter, that they are subject to change and are, in fact, changing, and that people are trying to clarify social choices with regard to alternative institutional change to improve the economic efficiency and the welfare performance of the economy."[3] As long as conventional economics operates in an institutional vacuum, taking market institutions as given, it will be unable to deal with a variety of critical economic issues.

[2]Chandler (1977) observed that technological development could explain only half the substantial increase in railroad productivity between 1870 and 1910; the other half was due to an organizational innovation, namely, the creation of a hierarchical apparatus to monitor, evaluate, and coordinate a complex system.

[3]Schultz presented his "Institutions and the Rising Economic Value of Man" in the first Fellow Lecture at the Annual Meeting of the American Agricultural Economics Association in 1968. Subsequently, the published paper received an award as the outstanding article published by the *American Journal of Agricultural Economics* in that year. To my knowledge, Schultz is one of the first contemporary economists who attempts to extend the modern analytical approach to investigate institutions and institutional changes. In *The Economic Organization of Agriculture*, which was published in 1953, he wrote, "There are alternative forms of organization and none of these is achievable without effort; that is, inputs are required to establish and maintain any given organization" (pp. 249–50). He also commented that because of the lack of a meaningful theory of social organization that could handle the relevant political and social variables, economists shied away from the analysis of institutions: "As a consequence, all too frequently the statements of economists leave the impression that markets and firms and households are sufficient in themselves to achieve a workable economic organization" (p. 254).

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The assumptions of frictionless transactions, perfect information, and well-defined property rights are particularly inadequate in dealing with many economic problems in underdeveloped areas where factor and output markets are imperfect and in understanding the evolution of history. In the past several years, a number of economists have attempted to extend the neoclassical framework in order to endogenize institutions. Increasing attention has been given to the role of information and transaction costs in determining efficient institutions in market economies (Arrow 1974; Williamson 1975, 1985), in primitive societies (Posner 1980), and in rural economies (Binswanger and Rosenzweig 1986). The same analytical framework has also been extended to explain institutional change over time (Schultz 1968; Davis and North 1970; North and Thomas 1970; North 1981; Hayami and Ruttan 1971; Binswanger and Ruttan 1978; Hayami and Kikuchi 1981). The present paper attempts to make a contribution to this growing literature.

My basic thesis is that individuals in any society—primitive and capitalist alike—face uncertainty and the possibility of disasters, in addition to the life cycle of their working abilities. They hope to survive and to achieve a high level of satisfaction. Institutions can be defined as the behavioral rules that are observed by the members of a society. Institutions are human devices designed to cope with uncertainty and to increase individual utility. In this regard, institutions, be they market or nonmarket, provide useful services; and as any other kind of service, institutional services are obtained with certain costs. For a given technology, transaction costs are of central concern in the choice of competitive institutional arrangements in a society. The institutional arrangement with the least costs in providing a given amount of service will be desirable.

The change from an existing institutional arrangement to an alternative is a costly process; unless the net gains to individuals from changing to the new arrangement outweigh the costs of the change, a voluntary institutional change will not occur. Institutional changes often require collective action. Free riders are thus an innate issue in institutional change. Furthermore, once a new institutional arrangement is introduced, it becomes a public good. Therefore, the supply of new institutional arrangements by the voluntary process will be less than the optimal supply. Institutional arrangements are interrelated in a society. The efficiency of a particular institutional arrangement cannot be assessed without referring to the other related institutional arrangements in that society. An institutional arrangement that is efficient in one society may not be efficient in other societies.

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Among all the institutional arrangements in a society, the government is the most important. The government can take actions to rectify the undersupply of institutions. However, a theory of the state is required to understand if the government has incentives to do so. The state will adopt a new institution only to the extent that the benefits to the state are higher than the costs. The failure of the state to institute the most efficient arrangements can occur because of ideological reasons, group interest conflicts, the limitation of social science knowledge, and so on. Economic growth will render some existing institutional arrangements obsolete due to the shifts in the demand or supply of institutional services. New institutional arrangements will thus be introduced to capture the profitable opportunities accompanying economic growth. Institutional change is thus inevitable in the process of development.

This paper is organized as follows. The next section explains why the world of Robinson Crusoe is only a fiction. The behavioral assumptions and the environment that individuals face are explicitly postulated. The determinants of institutional arrangements in a society are also specified. I then apply the demand and supply framework to analyze induced institutional change. The sources of institutional disequilibria are identified and the dynamics of induced changes are discussed. Next, a theory of the state is presented. Emphasis is placed on explaining why government often fails to institute efficient institutional arrangements. In the paper, induced and imposed institutional changes are distinguished. Whereas induced institutional change refers to the voluntary change by a group of individuals in response to profitable opportunities arising from institutional disequilibria, imposed change refers to change that is introduced by government fiat. Although a voluntary change in the institution often requires government action to facilitate the process, I separate these two types of changes for convenience of analysis.

The Functions of Institutions

In the most general sense, an institution can be perceived as a set of behavioral rules observed by individuals in a society.[4] It is unfortunate that one of the most frequently told stories in economic textbooks is that of Robinson Crusoe. Although this story illustrates the choices and constraints facing every decisionmaker, to start the inquiry into economic behavior with this story is actually misleading. In Crusoe's world no institutions are needed, even though from the very

[4]This is the definition given by Schultz (1968) in his celebrated paper. See also Ruttan (1978), Field (1981), and North (1981, chap. 15).

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beginning of history individuals have always lived in a society and have had to interact with each other. It is also a traditional view to say that human beings are "social animals" or that people have an "instinct" to join in a group.[5] These statements, however, do not increase our knowledge about institutions. It is not because human beings have to live in groups that institutions are needed; rather it is "the propensity to truck, barter, and exchange one thing for another" (Smith 1937, p. 13) that makes institutions indispensable. If "two or more persons exchange goods with each other, then the result for each one will depend in general not merely upon his own actions but on those of the others as well" (von Neumann and Morgenstern 1953, p. 11). Therefore, to make exchanges possible, behavioral rules that govern the way in which individuals can cooperate and compete are required. I shall investigate below the functions and the determinants of institutions, but first it is essential to specify the individual behavioral and environmental characteristics that lead to the existence of institutions.

The Need for Institutions

The reasons why institutions are indispensable need to be explained in terms of both the limitation of human ability and the environment in which individuals live.

One of the most robust assumptions in economics is that "men are rational." By rationality, economists mean that individuals, when confronted with real choices in exchange, will choose "more" rather than "less."[6] This approach to human behavior, according to Gary Becker, distinguishes economics from other social sciences (Becker 1976, chap. 1). Actually, most advances in economics in recent decades can be attributed to the reinterpretation and integration into the rational framework of those kinds of behavior that used to be taken as "nonrational" and thus were outside the purview of economic inquiry. This reinterpretation has been achieved by taking into account transaction costs, especially information and enforcement costs.

Following Becker's approach, I assume that individuals have stable preferences "that are defined over fundamental aspects of life, such as health, prestige, sensual pleasure, benevolence, or envy,"

[5]See the discussion of traditional views by Olson (1965, pp. 16–22).

[6]A formal definition of rationality is given by Luce and Raiffa (1957, p. 50) from the game-theoretical perspective: "Of two alternatives which give rise to outcomes, a player will choose the one which yields the more preferred outcome, or more precisely, in terms of the utility function he will attempt to maximize expected utility."

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which are denoted as commodities (Becker 1976, p. 5).[7] An individual uses purchased goods as well as his own time to produce these commodities to maximize his own utility. Therefore, an individual is not solely concerned with material gains or money income. Pursuing health, prestige, pleasure, and other nonmaterial commodities may induce individuals to forgo the maximum material gains that are available to him.[8] Although an individual is not necessarily selfish, he will be altruistic only to the extent that the returns to his altruism exceed the costs of being an altruist.[9] Rationality does not mean an individual will not make mistakes. A rational person, nevertheless, will cease to repeat the same mistake if the perceived benefits from correcting the mistake exceed the costs (Downs 1957, p. 9).

Although an individual is rational, his rationality is limited by his neurophysical ability to receive, store, retrieve, and process information, and by his linguistic ability to make knowledge or feelings understood by others (Williamson 1975, chap. 2). Because of bounded rationality, global maximization of individual utility will not be guaranteed in a complex environment. The other reason for the failure to achieve global maximization is that information is costly. It takes time, effort, and sometimes money to obtain data and comprehend their meaning. Therefore, it is rational to have less than perfect information if the expected gains from additional information are less than the costs.

Bounded rationality alone is not a sufficient condition for the indispensability of institutions. Robinson Crusoe is also rational in making his decisions about production and consumption. The cycle of individual life, uncertainties from health and the production process, and disasters from nature, on the one hand, and the gains from technological economies of scale and from externality, on the other hand,

[7]Becker's approach to the allocation of time, household production, and social interactions is especially relevant for the study of institutions and institutional change. His papers about these subjects are collected in Becker (1976). The arguments that enter the utility function, according to Jeremy Bentham, consist of senses, riches, address, friendship, good reputation, power, piety, benevolence, malevolence, knowledge, memory, imagination, hope, association, and relief of pain (see Becker 1976, p. 137).

[8]The concept that a rational individual attempts to maximize utility not income is essential to understanding the human behavior in an economy without perfect factor and output markets. In subsistence agriculture, a peasant will adopt practices that maximize the security of food production instead of maximizing the output that has the highest expected market value because a harvest failure may threaten his survival (Lipton 1968).

[9]This rational approach to human behavior does not assume that an individual is necessarily conscious of his efforts to maximize his utility in a systematic pattern. This view is emphasized by Friedman (1953), Becker (1976), and Posner (1980).

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are also necessary conditions for the existence of institutions. Because of the life cycle and exposure to uncertainty and because human beings are "limited in knowledge, foresight, skill, and time" (Simon 1957, p. 199), people need institutions to facilitate cooperation with others, to make provisions for security when they are young and old, to even out income and consumption over time, and to insure against the consequence of risks and disasters. I will refer to these functions as *security functions*. The other reason for the existence of institutions is the gains from economies of scale and externality. An individual as a unit of production is too small to internalize much of these economies. To exploit these gains, collective actions are required. These functions will be referred to as *economy functions*. It is for security reasons and economy reasons that people need to exchange goods and services with each other and make behavioral rules indispensable.

An Economic Inquiry into Institutions

Before going into any further investigation, a distinction needs to be made between an institutional arrangement and an institutional structure. An *institutional arrangement* is defined as a set of behavioral rules that govern a specific pattern of action and specific relations. An institutional arrangement can be formal or informal. Examples of formal institutional arrangements are families, firms, labor unions, hospitals, universities, governments, money, and future markets. In contrast, values, ideologies, and customs are examples of informal institutional arrangements.[10] When the term "institution" is used by economists, they are generally referring to an institutional arrangement. An *institutional structure*, on the other hand, is defined as the totality of both formal and informal institutional arrangements in a society.[11] In most cases, an institutional change refers to the

[10]Families, firms, hospitals, universities, and so on are institutions not because of their physical buildings but because of the rules that organize the behavior of individuals within them (Field 1979).

[11]I borrow the term "structure" from Montias (1976, p. 20). He says that "the *structure of the system* . . . consists of all the formal and informal rules constraining the actions of the participants." The concept of the institutional structure is broader than the institutional environment defined by Davis and North. The institutional environment they defined is "a set of fundamental political, social, and legal ground rules that govern economic and political activity (rules governing elections, property rights, and the rights of contract are examples of these ground rules)" (David and North 1970, p. 133). However, the institutional structure is narrower than the concept "structure" that North uses to denote "the political and economic institutions, technology, demography, and ideology of a society" (North 1981, p.3).

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change of a particular institutional arrangement and not to the change of every arrangement in the whole structure. The failure to distinguish between institutional arrangement and institutional structure has caused some controversy in the literature about the possibility of endogenizing institutional change (Field 1981).

Security and economy are the two fundamental reasons for the existence of institutional arrangements and thus the institutional structure. Examples of institutional arrangements for the purpose of security are families, cooperatives, insurance, and social security programs. Institutional arrangements that perform the economy function are firms, irrigation systems, highways, schools, agricultural experiment stations, to name just a few. It is worthwhile to notice that an institutional arrangement, like a family and a cooperative, may at the same time perform several functions.

Institutional arrangements are means of achieving the benefits of collective actions. Since individual rationality does not necessarily imply group rationality, it is in the interest of each individual to seek the most favorable result for himself. Conflicts of interest may arise. Individuals often have to assess the quality of other people's work or contributions. Information about quality is in many circumstances very costly, uncertain, or even impossible to obtain. Collective actions thus create some problems that do not exist when individuals work alone. Among these problems are cheating, shirking, free riders,[12] and moral hazard.[13] These issues are emphasized by economists writing in the areas of property rights, transaction costs, and public choice (see Olson 1965; Demsetz 1967; Alchian and Demsetz 1972; Furubotn and Pejovich 1972; Williamson 1975, 1985). To alleviate these problems, institutional arrangements such as hierarchies, contracts, and laws are created to perform monitoring and enforcement functions.

The problems of shirking, free riders, and moral hazard increase the costs of supplying the services of fundamental institutional arrangements. But there are also some institutional arrangements that act to reduce the costs of supplying the services of fundamental institutional arrangements. Private property rights, money, contracts,

[12]"Free riders" refers to the problem that occurs in a group when an individual automatically receives the service provided by the group even if he does not contribute to the costs. To overcome the problem, a group needs to be able to provide selective incentives to the member in order to maintain itself (Olson 1965).

[13]The original meaning of "moral hazard" refers to the case in which a person takes less than appropriate action to prevent risk when he is insured. In the principal-agent literature, moral hazard, however, refers to the case in which a worker contributes less effort than he is paid for because of asymmetrical information or imperfect monitoring.

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customs, ethics, mores, and ideologies are a few examples.[14] The existence of private rights, a legal system, money, and so on presumes the existence of a state. The discussion of institutions is therefore not complete without a theory of the state. However, I will suspend the investigation of the state until later in the paper.

The Institutional Role of Ideology

The most important institutional arrangement that exists to reduce the costs of providing the services of other institutional arrangements is ideology. Ideology has long been a subject of concern for Marxian economists. Perhaps because of this, it has not received much attention from mainstream economists until very recently.[15] However, as noted by Kenneth Arrow (1974, p. 72), "Employees follow instructions, and citizens obey law to a much greater extent than can be explained on the basis of control mechanisms." To close this gap, a positive theory of ideology is required.

Ideology can be defined as a set of beliefs about the world, including beliefs about the morality of the division of labor, income distribution, and the existing institutional structure of a society. According to Douglass North (1981, p. 49), ideologies have three stylized features:

1. Ideology is an economizing device by which individuals come to terms with their environment and are provided with a "world view" so that the decision-making process is simplified.
2. Ideology is inextricably interwoven with moral and ethical judgments about the fairness of the world the individual perceives. . . .
3. Individuals alter their ideological perspectives when their experiences are inconsistent with their ideology. In effect, they attempt to develop a new set of rationalizations that are a better "fit" with their experiences. However, it is important to stress . . . inconsistencies between experience and ideologies must accumulate before individuals alter their ideology.

Ideology is mentioned in the literature mostly for its function in legitimating the existing institutional structure or solidifying a group. It is true that a society or group cannot exist for long if the majority of its members do not share the same feeling about the justice of the system. And in a society if the differences in ideology between

[14]As Arrow notes, "Trust is an important lubricant of a social system. It is extremely efficient; it saves a lot of trouble to have a fair degree of reliance on other people's words. . . . Trust and similar values, loyalty or truthtelling . . . are commodities; they have real, practical, economic value; they increase the efficiency of the system, enable you to produce more goods or more of whatever values you hold in high esteem" (Arrow 1974, p. 23).

[15]See Downs (1957, chap. 7; 1966, chap. 19), North (1981, chap. 5), Lodge (1986), and Lodge and Vogel (1987).

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different classes are deep enough, revolution will follow. A society or an organization is formed to exploit the gains that an individual is unable to capture. But the rationality assumption of individual behavior also implies that any large organization is inherently beset by free-rider problems (Olson 1965). A successful ideology, therefore, must also overcome the free-rider problem. Since an ideology is an economizing device for expressing a world view, to be effective it must conform reasonably well with an individual's experience of the world. As the world changes and experiences accumulate, individuals' perceptions of a fair world also change. Consequently, a successful ideology must also be flexible enough to capture the loyalty of new groups and retain the loyalty of older groups (North 1981, chap. 5).

Ideologies exist because the world is complex and the rationality of the human mind is bounded. If the world were simple or an individual's rationality were unbounded, an individual could judge the fairness of the reality around him without taking a shortcut in the form of an ideology. An ideology's primary institutional function is thus to serve as a device for economizing information costs. But by what mechanism does an ideology perform the functions of checking free riders and reducing the costs of enforcing law and order? I submit that a successful ideology performs these functions by providing selective incentives to individuals.[16] As argued forcefully by Becker, individuals use market goods and services, their own time, human capital, and other inputs to produce a set of commodities that are defined over fundamental aspects of life in order to maximize utility.

[16]North (1981) correctly perceived the necessity of broadening the arguments in the utility function to explain the functions of ideology. However, because of his reluctance to accept fully Stigler and Becker's (1977) reformulation of the utility function, he is a step short of constructing a positive theory of ideology. In his formulation, individuals must act irrationally when ideologies are involved. For example, he states that "any successful ideology must overcome the free-rider problem. Its fundamental aim is to energize groups to behave contrary to a simple, hedonic, individual calculus of costs and benefits" (North 1981, p. 53). He makes this position even more explicit in his review of Olson's book, *The Rise and Decline of Nations:* "People frequently act through conviction about the legitimacy or fairness of the set of rules of the game that surrounds them. That is, if people are convinced the rules are fair, they may obey them even when at times they could be better off not obeying them" (North 1983, p. 164). However, as maintained by Becker (1976, pp. 7–8), "The economic approach does not draw conceptual distinctions between major and minor decisions . . . or between decisions said to involve strong emotions and those with little emotional involvement . . . or between decisions by persons with different incomes, education, or family backgrounds." How then will a rational individual be a simple hedonic who carefully calculates costs and benefits when ideological considerations are not involved but abstains from doing so when such considerations are present?

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Piety, which Jeremy Bentham maintained as one of the 15 simple pleasures, should be one of the commodities that enters an individual's utility function. The ability to produce this commodity, among others, depends on an individual's ideological capital. When an individual's ideological conviction is strong, it implies that his ideological capital is large, and that the shadow price of producing piety is low. His marginal utility of time allocated to piety is high; therefore, he allocates more time to the consumption of piety.

Mancur Olson (1965) is right in pointing out that for any large organization to be viable, it should be able to provide selective incentives to its members. But Olson defines the arguments in the utility function narrowly; therefore, he cannot explain why most people vote. North notes that many people vote for ideological reasons, but he fails to recognize that voting is an activity that produces a commodity that an individual consumes. An individual will vote because voting produces a commodity, piety, which he values. However, he will vote only if the benefits are larger than the costs. This is the reason why the number of voters falls greatly if it rains.

An ideology is human capital that helps an individual make a moral judgment about his and others' roles in the division of labor, the distribution of income, and the existing institutional structure. This human capital theory of ideology has the following four implications. (1) A larger ideological endowment reduces the shadow price of consuming piety. Therefore, an individual is less likely to free ride or violate the rules the higher is his ideological conviction about the morality of the institutional arrangements and the structure surrounding him. (2) An individual's ideology is relatively stable. A change in the distribution of income, the division of labor, or other institutional arrangements will not immediately change an individual's ideology. This is because an individual cannot tell immediately whether an institutional change is temporary or permanent. If the change is permanent, it will take time for the individual to divest the old ideological capital. (3) If a permanent change does occur, young people are more apt to invest in acquiring a new ideology than old people, even if the young have the same preferences. This result stems from the fact that, in general, old people have more ideological capital to divest, which takes time and effort. Moreover, old people have less incentive to invest in a new ideology because they have fewer remaining years to collect the returns. (4) A final implication is that opportunistic behavior is attenuated by the ideological conviction of the legitimacy of the existing institutional arrangements. In this sense, an ideology is a type of human capital that produces a significant externality from the authority's point of view. Therefore,

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any government will subsidize the individual's accumulation of ideological capital by investing in ideological education. However, as in the case of advertising (Stigler and Becker 1977), ideology affects people's behavior not by changing tastes, but by changing relative prices.[17]

An Economic Approach to Induced Institutional Change

For any desired institutional service, there are always a number of institutional arrangements that can perform this function. The choice of an institutional arrangement thus involves the comparison of costs and benefits. In conventional cost-benefit analysis, only production costs are taken into account. Optimality is obtained when the values of marginal products of each input are equalized. The costs in the choice of an institutional arrangement, nevertheless, also include transaction costs, that is, the costs of organizing, maintaining, and enforcing the rules of an institutional arrangement. In addition to technical factors, the transaction costs of an institutional arrangement also depend on the perceived legitimacy of the arrangement.

Theoretically, if we abstract from the role of the state, it is easy to say that with given production and transaction costs, one institutional arrangement is more efficient than another whenever it provides more services. Alternatively, for two institutional arrangements that provide the same amount of service, the one with lower costs is a more efficient arrangement. Therefore, there are two different types of factors that can affect the efficiency of an institutional arrangement. The first type affects production efficiency while the second type involves those factors that determine transaction efficiency. Fundamentally, these two types of factors are functions of technology. However, assessing the efficiency of an institutional arrangement is extremely complicated in reality.

Since an institutional arrangement is embedded in the institutional structure, its efficiency also depends on how well the other institutional arrangements perform their functions.[18] For example, in a barter

[17]It should be clear that large interest groups, cooperatives, and bureaus will also invest in ideological education to convince their members of their legitimacy. The analysis of ideology should be readily applicable to the other informal institutions, such as ethical codes, mores, and customs.

[18]This point has long been recognized by sociologists. For example, Eisenstadt (1968, p. 412) notes that "the analysis of any concrete institutional pattern has to start from the existence of institutional arrangements as inherent in the very nature of human society." However, economists tend to ignore this point, except for the institutional school economists.

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system there is great inconvenience and cost in searching for someone who has what you want and wants what you have. This inconvenience alone, nevertheless, does not indicate that it is necessarily inefficient. Since the costs of having an agreed-on commodity serve as a generally acceptable means of exchange or of establishing and maintaining a monetary authority are very high, a barter system can be more efficient than a money-exchange system if people rarely exchange goods. This is the situation in a primitive society. It is, therefore, fruitless to single out a particular institutional arrangement and to discuss its efficiency in absolute terms. The study of an institutional arrangement requires specific knowledge of the historic time, region, and the institutional structure within which the arrangement is situated. In the absence of such an understanding, a discussion of the efficiency of a particular institutional arrangement is without substance.[19] The direction and scope of institutional change, however, are not random: They can be subject to rigorous economic analysis. A more profitable approach, therefore, is to investigate why new institutional arrangements are innovated and how they are adopted.

There are two types of institutional change: induced and imposed. An *induced* institutional change refers to a modification or replacement of an existing institutional arrangement or the emergence of a new institutional arrangement that is voluntarily initiated, organized, and executed by an individual or a group of individuals in response to profitable opportunities. An *imposed* change, in contrast, is introduced and executed by governmental orders or laws.[20] The induced institutional change must be caused by a profitable opportunity that is not attainable under the original institutional arrangement. The imposed institutional change, however, can occur purely for the purpose of redistributing existing income among different groups of constituents. Although a voluntary change in an institutional arrangement, especially a formal arrangement, often requires governmental action to facilitate the process, I separate these two types of change for the convenience of analysis.

[19]This point is succinctly expressed by T. N. Srinivasan (1984, p. 55) in his comments on a paper by Lord Bauer about the relative efficiencies of markets compared with those of planning: "A fuller understanding of their systemic role in concrete sociopolitical-economic contexts is essential in devising development policies. In the absence of such understanding, a discussion of the place of markets or, for that matter, central planning cannot go very much beyond assigning totemic value to either."

[20]The terms "institutional change" and "institutional innovation" are used interchangeably in this paper because a modification of an existing arrangement is also an innovative activity, and the adoption of a newly innovated arrangement must change the original one.

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The Sources of Institutional Disequilibrium

An institutional arrangement will be chosen from a set of possible arrangements if it is more efficient than the other arrangements in the choice set, taking both production and transaction costs into account. Since the transaction costs of a particular arrangement depend on other arrangements (such as laws, customs, and ideologies), the most efficient institutional arrangement is also a function of the other arrangements in the institutional structure. For an induced institutional change to occur, there must be some profitable opportunities that arise from institutional disequilibrium; that is, there must be some reason the existing institutional arrangement is no longer the most efficient one in the choice set.

Starting from an original equilibrium point, institutional disequilibrium can arise from four different sources: (1) changes in the institutional choice set, (2) changes in technology, (3) long-run changes in relative factor and product prices, and (4) changes in the other institutional arrangements. Each of these four sources, in turn, consists of several different factors.

1. Changes in the Institutional Choice Set. Just as the set of feasible production technology is a function of our knowledge in physics, chemistry, and other natural sciences, the set of feasible institutional arrangements for a particular institutional service depends on our knowledge in the social sciences. Vernon Ruttan (1984) has argued forcefully that the demand for knowledge in economics and the other social sciences—as well as in related disciplines such as law, business, and social services—is derived primarily from the demand for institutional change and improvements in institutional performance. Advances in the social sciences improve the bounded rationality of the human mind and therefore not only increase individuals' ability to manage existing arrangements but also to perceive and innovate new institutional arrangements.

An institutional choice set may also be enlarged by contacts with other economies, just as contacts with other economies may increase the available technological choice set. P. T. Bauer (1984, p. 12) has emphasized the role of individual traders in spreading new technology and institutional arrangements and, as a result, in encouraging people to "question existing habits and mores," and in bringing about the uncoerced erosion of attitudes and customs uncongenial to material progress." The possibility of institutional change through borrowing another society's institutional arrangement greatly decreases the costs of investment in basic social science research. However, the institutional transfer may be more difficult than the technological

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transfer, as the efficiency of an institutional arrangement crucially depends on the existence of other related arrangements. Otto Schiller (1969, chap. 7) reported a case in which the Burmese government sent some people to the Israeli "Kibbutzim" for practical training. These trainees came to the conclusion after a year that this extreme form of collectivism would not be acceptable to them because it required so much public spirit and self-restraint. A great deal of adaption is required for a transferred institutional arrangement to perform its functions.[21]

The institutional choice set can also be enlarged or reduced by a change in government policies. For reasons that will be discussed in the next section, the government may exclude some institutional arrangements from the choice set. Therefore, removing a restrictive government policy has the same effect as enlarging the choice set. One recent example is the shift in the government policy in China concerning the farming institution in rural areas. Before recent changes, a household farming arrangement was prohibited; the only acceptable mode was collective farming. However, because of the shift in government policy, about 95 percent of households in China changed to the new household-based farming system between 1980 and 1983 (Lin 1987). On the other hand, when the government institutes a new constraint in the institutional choice set and this constraint is binding, institutional disequilibrium will result. An originally less efficient arrangement may then become a dominant one in the restricted choice set. The emergence of subtenancy in the Philippine villages surveyed by Hayami and Kikuchi (1981) is a result of the restriction of rent by the land reform law.

2. *Changes in Technology.* I share Marx's view that the institutional structure of a society is fundamentally conditioned by technology. In an authoritative statement expressed in his 1859 preface to a *Critique of Political Economy,* Marx wrote:

> The mode of production of material life conditions the social, political and intellectual life process in general. . . . At a certain stage of their development, the material productive forces come in conflict with the existing relations of productions, or—what is but a legal expression for the same thing—with the property relations within which they have been at work hitherto. From forms of development

[21]Although, in the very long run, the institutional arrangements and structure in any society may converge, in the short run, the most efficient institutional arrangements will be different in different societies due to the difference in socio-political histories. It is a pity that many journalists and politicians fail to see this point and use the institutional arrangements in their own countries to judge the institutional arrangements in other societies.

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> of the production forces these relations turn into their fetters. Then begins an epoch of social revolution. With the change of the economic foundation the entire immense superstructure is more or less rapidly transformed. . . . No social order ever perishes before all the productive forces for which there is room in it have developed; and new, higher relations of production never appear before the material conditions of their existence have matured in the womb of the old society itself.[22]

In addition to its determinant role on the institutional structure, the change in technology will also alter the relative efficiencies of particular institutional arrangements and make some other arrangements inoperative. The impacts of technological change can be analyzed from its effects on production and transaction costs.

On the production side, new institutional arrangements are often required to take advantage of new potential externalities or to modify the partitioning of new income streams among factor owners and economic sectors. The dominance of modern firms over traditional family workshops in the manufacturing industry, which is a response to the size demanded by the use of machinery in the production process, is an example of the first case (Brewster 1950). In the Philippines, the introduction of modern high-yield varieties of rice and the increase in the availability of labor have resulted in the replacement of the traditional *hunusan* contract (in which all villagers have the right to participate in harvesting and receive one-sixth of the yield) by the *gama* contract, which gives an exclusive right of harvesting for the same share to the workers who do weeding without receiving a wage (Hayami and Kikuchi 1981, chap. 5). Clearly, the innovation of the *gama* system was induced by the desire to modify the new income stream between landowners and laborers.

Changes in technology may also affect transaction costs and make some institutional arrangements operative that were originally inoperative. The establishment of private property rights requires, among other things, that the benefits the owner derives from the rights are greater than the costs of excluding others from using his property. When the costs are too high, the property will be commonly owned.

[22]In Marx and Engels (1968, pp. 182–83). It is worth noting that my definition of the institutional structure includes both production relations and the superstructure in Marxian terminology. Since both the production relations and superstructure are conditioned by the technology, my analysis is consistent with Marx's view. However, there is one distinction here. Marx's statement mainly refers to the change in the whole institutional structure, that is, the dramatic change from the primitive to the feudal, from the feudal to the capitalist system. My analysis is restricted to the changes of particular institutional arrangements, taking other arrangements in the structure as given.

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For example, grazing land in general is commonly owned because of the cost of fencing. However, the innovation of low-cost, barbed-wire fencing resulted in the private ownership and leasing of public grazing land in the American West (Anderson and Hill 1975). The innovation of tractors and other farm machinery greatly reduces the cost of supervision as it is easier to supervise one driver than a large number of manual workers. As a result, there is a tendency to shift from sharecropping to owner operating or to change from sharecroppers to wage workers (Day 1967, Binswanger 1978).

3. *Long-run Changes in Relative Factor and Product Prices.* The long-run changes in the relative prices of factors and goods are some of the major reasons behind many of the changes in the property rights arrangement in history.[23] The rise in the relative price of a factor will make the ownership of that factor relatively more profitable compared with other factors. The rise in the price of a product will also make the exclusive use of the factors that are used to produce this product more attractive. According to North and Thomas (1973), the shift from property rights in man to property rights in land in medieval Europe was a result of an increase in population and in the scarcity of land that increased the relative price of land. Likewise, David Feeny (1982) found that in Thailand the transfer from property rights in man to property rights in land between the mid–19th century and the early 20th century can be explained by the increases in population and in the export demand for rice during that period. In England the increase in the price of food made the enclosure of open fields and common pastures profitable. Donald McCloskey (1975) estimated that, despite the high costs of fencing, the enclosure yielded a yearly rate of return on the order of 17 percent.

4. *Changes in Other Institutional Arrangements.* The performances of institutional arrangements in a structure are interdependent. A change in a particular arrangement, therefore, may result in corresponding changes in the demand for the services of other arrangements. As W. Arthur Lewis (1955, p. 146) observed, "Once institutions begin to change, they change in ways which are self-enforcing. The old beliefs and institutions are altered, and the new beliefs and institutions gradually become more consistent with each other and with further change in the same direction."

Richard Posner (1980) has argued that sense of honor, which was such a prominent trait in primitive and ancient societies, can be

[23]Since the right to ownership is an exclusive right that is limited only by those restrictions that are imposed by the state, the change in the contents of property rights will necessarily involve government intervention. Therefore, a theory of the state is also required to explain the change in property rights.

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explained by the lack of a formal law-enforcement arrangement. Sense of honor increases the probability of retaliating. It is, therefore, an important device to keep society in order. In modern states, honor is still valued. However, the state has become the sole institutional arrangement that keeps society in order. Retaliation and duels are forbidden. The existence of a "subsistence ethic" in the preindustrialized society can be explained by the low level of agricultural productivity and the limited potential size of a market. The patron-client relation is a device to lower transaction costs. It substitutes for a set of specialized markets for labor, land, credit, insurance, and so on (Hayami and Kikuchi 1981, chap. 2). The expansion of markets thus weakened the mutual help and patron-client relation (Polanyi 1944). In my own research (Lin 1989), I have found that factor markets were very limited in China's rural areas before the recent change in farming arrangements. The shift from collective farming to the household-based farming system has resulted in the reemergence of labor, land, and credit markets in rural China.

The Dynamics of Induced Institutional Change

Profitable opportunities will arise from the institutional disequilibrium discussed above. New institutional arrangements will be innovated to take advantage of these profitable opportunities. Since the institutional structure is composed of individual arrangements, one particular institutional arrangement in disequilibrium means that the whole institutional structure is in disequilibrium. If the rationality of the human mind is unbounded and setting up the new institutional arrangements is costless and timeless, then, in response to any institutional disequilibrium, society will instantly go from one equilibrium structure to another. The rationality of the human mind, however, is bounded. It is beyond the capacity of the human mind to perceive all the necessary changes and to design all the optimal arrangements at the same time. The process of setting up a new institutional arrangement is also costly in terms of time, effort, and resources. Furthermore, individuals with different experiences and roles in the structure will have different perceptions of the degree and source of disequilibrium. They will also seek different ways of partitioning the gains from the change. For a new set of behavioral rules to be accepted and adopted, negotiation and agreement among individuals is required. Therefore, when disequilibrium occurs, the process of institutional change will most likely start from one arrangement and spread only gradually to other arrangements.[24] The pro-

[24]In Lewis's words, "Change begins at some spot in the web of beliefs and relationships, and spreads outward from there" (Lewis 1955, p. 144).

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cesses thus take place in a historically determined structure and are conditioned by the existing structure. Consequently, some arrangements may be favorable from an abstract theoretical point of view but are not viable because of incompatibility with other existing arrangements in the structure.[25] During the process of institutional change, most of the institutional arrangements are inherited from the previous structure. Although the fundamental properties of a structure will be altered when the accumulation of changes in individual arrangements reaches a certain critical point, the process of institutional change resembles an evolutionary process (Alchian 1950, Nelson and Winter 1982).

Society as a whole will gain from the innovation of an institutional arrangement that captures the profitable opportunity arising from institutional disequilibrium.[26] Whether this innovation will take place, however, depends on the expected gains and costs to the individual innovators. The gains and costs to the innovators are more complicated than the calculus of social gains and costs. The calculation problems are different for different types of arrangements. For the purpose of this paper, institutional arrangements will be classified into two types: a formal institutional arrangement and an informal institutional arrangement.

A *formal* institutional arrangement refers to the type of arrangement whereby a change or modification of existing rules requires the sanction of the group of individuals whose behavior is governed by the arrangement. Since unanimity is a precondition for a voluntary change of a formal institutional arrangement, any change in a formal arrangement requires innovators to take the time and effort to organize, negotiate, and obtain the consensus of the group. The emergency of subtenancy and the shift from the traditional *hunusan* contract to the *gama* contract in the Philippine villages studied by Hayami and Kikuchi are just two examples of this type of institutional change. In contrast, an *informal* institutional arrangement refers to the type of arrangement whereby the modification or change of rules is carried

[25]The change from the *hunusan* contract to the *gama* contract in the Hayami and Kikuchi study (1981) exemplifies this point. The actual wage is reduced in the *gama* contract. However, it is the *gama* arrangement, not a free labor market, that is adopted because the *gama* contract appears legitimate to villagers in terms of traditional moral principles of mutual help and income sharing in the village.

[26]Some institutional innovations are purely motivated by the purpose of redistributing the existing social income. In addition to some individuals losing, the society as a whole may also lose because the innovation is a resource-consuming process. However, such an innovation will not be a voluntary process. It is in general imposed by the government. The discussion of this type of change will be discussed in the next section.

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out purely by individuals without collective action. Initially, the individual innovators will be considered by others as violating the existing rules. The institutional arrangement will be transformed only when the majority of the individuals in the society abandon the original arrangement and adopt the new one. Examples of such an institutional arrangement are values, ethical norms, mores, customs, and ideologies.

Changing a formal institutional arrangement will generally encounter both the externality and free-rider problems. The externality problem arises because an institutional arrangement is not patentable. When an institutional arrangement is innovated, other groups of individuals can imitate the innovation and dramatically reduce their costs of organizing and devising the new arrangement. Therefore, the returns to the innovator will be less than the returns to society as a whole. The implication of this problem is that the intensity and frequency of innovations in the formal institutional arrangement will be less than socially optimal. Persistence of institutional disequilibria may occur as a result.

The free-rider problem may arise because an institutional arrangement is a public good. Once it is innovated and instituted, every individual who is governed by the arrangement will receive the same service. The free-rider problem, however, will be lessened by the ideological convictions of individuals. If the new arrangement is in conformity with individuals' ideas of a fair world, the premium required for them to free ride will be larger. The severity of the free-rider problem also depends on how the group of individuals is related. If the mobility of the members of the group is high, free riding is more likely to happen because an individual's behavior is less likely to be detected. Another consideration is how tightly the group is structured. In a tightly structured community, Hayami and Kikuchi (1981, p. 36) argue that "people are less individualistic and conform to social norms more closely"; the free-rider problem will thus be less severe.

Because of the free-rider problem, the role of political or institutional entrepreneurs is especially crucial in the innovation of a formal arrangement. A political entrepreneur is someone "who is generally trusted (feared), or who can guess who is bluffing in the bargaining, or who can simply save bargaining time, can sometimes work out an arrangement that is better for all concerned than any outcome that could emerge without entrepreneurial leadership or organization" (Olson 1965, p. 176).

Institutional disequilibrium may affect different individuals differently. Therefore, the success of a political entrepreneur depends, among other things, on his ability to design a partitioning of the

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potential profits that seems to make everyone better off and to convince the members that this partitioning is in conformity with their own ideologies. The political entrepreneur will make an effort to articulate the new goals and set up the new rules, if he believes the gains are greater than the costs to him. The gains need not be material; they can also be nonmaterial, such as those of social prestige or political support (Eisenstadt 1965, 1968). The costs to the entrepreneur will be smaller if he can mobilize political support from government agencies or ally with local interest groups (Hayami and Kikuchi 1981, chap. 2). However, this consideration implies that the new institutional arrangement may be detrimental to some individuals because, once the coercive power is applied, the consensus is not a necessary condition for the innovation.

The problems that may arise from the innovation process involving informal institutional arrangements are quite different from those associated with formal arrangements. Since the innovation of an informal arrangement does not involve group action, there will be no free-rider problems, although externality problems may still exist. The adoption of new rules completely depends on the individual calculation of the benefits and costs that may arise from the innovation. The innovation costs of the informal arrangement do not take the form of time, effort, or resources spent on the process of innovation. As the enforcement of informal institutional arrangements depends on social interactions, the costs to an innovator come primarily from the social pressures around him. These costs will be extremely high if the profitable opportunity is not equally distributed among the members of the community. Those individuals who do not share the gains from the innovation may feel that the sacred mores are offended and their customary rights stripped. Gossiping and even violence may follow. This is the situation that often happens when a subsistence-oriented peasant economy is penetrated by the market system (Scott 1976). For fear of social opprobrium and ostracism, an individual may be reluctant to violate the informal arrangements, even if the material gains from this violation appear to be very large. For this reason, the informal institutional arrangements tend to be harder to change than the formal arrangements. Even with governmental action the changes will not be easy.[27]

[27]Forcing people to abandon their traditional beliefs, values, attitudes, mores, and modes of living may cause much unrest. As Bauer (1984, p. 31) notes, "Governments of developing countries have in fact rarely attempted such enforced transformations. They generally recognize that attempts of this kind would invite strong resistance, possibly revolt. Even substantial moves in such a direction, or suspicions that such attempts will be made, can elicit violent responses, as indeed has often happened in Asia and Africa."

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Nevertheless, the criteria and characters of the change in informal arrangements are not altered. Values, customs, and social mores, like ideologies, have all been changed in the process of human history. The crucial issue for innovators is still the same as that for other economic decisionmakers. When institutional disequilibrium gives rise to large enough expected benefits to cover the potential costs, individuals will make the effort to adopt new values, mores, and customs no matter how deeply rooted these rules seem to be.

The enforcement of informal institutional arrangements mainly depends on the social interactions. Therefore, the higher the mobility of the members in a group or community, the less effective this enforcement mechanism is. Hence, the higher the mobility, the easier it is for the members to give up traditional arrangements and adopt new ones. This explains why values and mores are, in general, in flux in a market economy and fixed in a traditional economy. Young persons in a market economy will also be more likely to be innovators than old persons for the same reasons that have been argued for ideological changes. This phenomenon is the so-called "generation gap."

The Political Economy of Imposed Institutional Change

Because an institutional arrangement is a public good and the free-rider problem is innate to the innovation process, the supply of institutional arrangements in a society will be less than socially optimal if the induced innovation is the only source of new institutional arrangements. A persistent institutional undersupply can be remedied by state interventions. Since state interventions also incur costs and benefits to the state, whether the state has the incentive to take the appropriate actions is an issue that can be subject to economic analysis. This section presents an economic model of the state. Decisionmaking by the state will be discussed from the viewpoint of a ruler. The ruler can be a king, chief, premier, or elected president. It will be shown that a rational ruler may fail to rectify the undersupply of institutional arrangements for reasons that will be discussed under the title of policy failure.

An Economic Approach to the State

The state, according to Max Weber's definition, is that institutional arrangement that has a monopoly over the legitimate use of coercion in a given area.[28] The basic functions of the state are to provide law

[28]Weber's definition of the state is quoted in Frohlich and Oppenheimer (1974).

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and order, and to protect property rights for the exchange of tax revenue. Since there are great economies of scale in using the coercive power, the state belongs to the category of natural monopoly. The state as a monopolist can provide the above-mentioned services much cheaper than a competitive organization. Total income in the society is thus higher when the state exists than when individuals have to provide the services themselves or obtain them from other competitive organizations. Normatively, it may be argued that the most desirable state is the minimal state that is "limited to the narrow functions of protection against force, theft, fraud, enforcement of contracts, and so on" (Nozick 1974, p. ix). However, in reality, this argument is irrelevant. Being a monopolist in the legitimate use of coercive power, the state can extend its spheres of influence much more than those of a minimal state. Although the state cannot determine how an institution will work, as noted by John Stuart Mill, it has "the power of deciding what institutions shall exist" (Mill 1848, p. 21).[29] A more interesting question is whether the state has the incentive and ability to design and impose a suitable institutional arrangement, which the induced institutional change process fails to provide.

There are several approaches that have been proposed to study decisionmaking by the state. The first approach views the state as an organic entity. The state in this view is personalized. It has its own values, motivations, and objectives that are independent of the individuals of which the state is composed. Becoming an integrated cell of the state, an individual loses his own identity. The state acts to maximize its own welfare or utility. Although this view is simple methodologically, it does not have much substance because, as commented by Anthony Downs (1957, p. 17), "It is based upon a mythical entity: a state which is a thing apart from individual men."

The second approach, initiated by Buchanan and Tullock (1962), conceives the state as an instrument for achieving collective action. It is merely a set of processes, a machine by which individuals can satisfy some of their wants. Individuals buy services from it and pay only the costs for the services they receive. This view is incomplete because it neglects the incentives of the persons who actually make decisions and run the state apparatus.

The third approach, proposed by Downs (1957) in his germane study of government, views decisionmaking by the state from the viewpoint of a political party, which is defined as a team of men seeking to control the governing apparatus by legal means. The

[29]Quoted by Fields (1981, p. 186).

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members of a political party are assumed to agree on all their goals instead of on just part of them. The political party is thus viewed as a single person with a consistent preference ordering. This approach is also unrealistic, as Downs (1957, p. 26) himself admitted: "In reality not even the key officials of any government have exactly the same goals."

Since in any society the ultimate authority of the state is in the hands of a politician who is more or less shielded from the preferences and pressures of citizens, a more satisfactory approach is to view decisionmaking by the state through the behavior of the ruler of the state—be he a king, president, prime minister, or behind-the-curtain supreme leader (Frohlich and Oppenheimer 1974; North 1981, chap. 3).[30] The ruler, like any individual with bounded rationality, is concerned with his own survival, prestige, power, wealth, and position in history. Within the constraints of possible revolt, and the threats of potential rulers within or without, the ruler will do whatever he deems adequate to maximize his own utility. The ruler, however, will maintain a set of rules to reduce the transaction costs of ruling the state. These rules include those surrounding a system of uniform weights and measurements, and those associated with a judicial system required to settle differences. The power, prestige, and wealth of the ruler ultimately depend on the wealth of the state. Therefore, the ruler will also provide a set of property rights that facilitates production and trade and a set of enforcement procedures to enforce contracts. The compliance costs of the political system depend on the perceived legitimacy of the ruler. As such, the ruler will invest in ideological education to convince constituents of the legitimacy of his authority.

As the economy grows, institutional disequilibria emerge. Some of the disequilibria will be removed by the induced innovations. However, some of them will persist because of the divergence between private and social benefits and costs. The ruler will take actions to remove the disequilibrium if the expected profits for the ruler are higher than the expected costs of imposing this change. An inefficient disequilibrium, nevertheless, may also be maintained by the state if the change in the institutional arrangement lowers the obtainable

[30]As noted by Dahl and Charles (1953, p. 42), "Whoever controls government usually has the 'last word' on a question; whoever controls government can enforce decisions on other organization in the area" (quoted by Downs 1957, p. 22). The constraints that are put on the absolute power of the ruler definitely differ from society to society, largely conditioned on their past histories. However, even a popularly elected president or prime minister has a large degree of freedom in pursuing his own goals because of the length between election periods and other factors (Breton 1974).

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utility or threatens the survival of the ruler. That is, the ruler will take actions to remedy the undersupply of institutional innovation only to the extent that the estimated marginal benefits of imposing a new arrangement exceed the estimated marginal costs to the ruler in terms of net tax revenue, political supports, and other commodities that enter the ruler's utility function. There is no guarantee that the utility-maximizing ruler has the incentives to implement policies to facilitate the supply of institutional arrangements to the socially optimal point that maximizes social wealth.

The Sources of Policy Failures

The maintenance of an inefficient arrangement and the failure of the state to take actions to remove institutional disequilibria both will be referred to as policy failures. The policy failures have the following origins: the preferences and bounded rationality of the ruler, ideological rigidity, bureaucracy and the agency problem, group interest conflicts, and the limitation of social science knowledge.

The Preferences and Bounded Rationality of the Ruler. The efficiency of an institutional arrangement is defined by its impact on the total wealth of the nation. If the ruler is a wealth maximizer and his personal wealth is proportional to the wealth of the nation, he will have an incentive to institute the most efficient arrangement within the limits of his authority. However, if the new institutional arrangement brings higher income to the nation but lower benefits to the ruler because of an increase in the ruler's transaction costs, he may find that it is not in his interest to institute the new arrangement. Furthermore, wealth is only one of the many commodities that the ruler values. If the ruler, for example, is concerned more about his prestige in the international political arena, he may institute an arrangement that strengthens military power at the cost of the nation's wealth. From the utility-maximizing model of the ruler, we can also predict that the ruler will be more concerned about his prestige as the wealth of the nation increases.[31] Finally, even if the ruler is a wealth maximizer, he may still fail to rectify the undersupply of institutional arrangements due to his bounded rationality and the complexity of information required to recognize and comprehend the institutional disequilibria, and to design and institute a new arrangement.

Ideological Rigidity. The transaction costs of ruling the state are reduced if the constituents have a strong conviction toward the

[31]As the wealth of the ruler increases, the marginal utility of wealth declines and the marginal utilities of other commodities such as prestige and position in history increase. Therefore, the ruler will trade off some wealth to increase his prestige and reputation.

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legitimacy of the ruler and the fairness of existing institutional arrangements. Therefore, the ruler will develop an ideology that serves his purposes and will invest in education to inculcate the constituents with his ideology. The ruler is thus personally identified with the ideology that he promotes. As institutional disequilibrium emerges, the gap between the ideology and reality grows. Imposing new institutional arrangements to restore equilibrium and changing the original ideology, however, are likely to undermine the legitimacy of the ruler's authority. Therefore, instead of introducing new institutional arrangements, the ruler may maintain the old inefficient arrangements and battle to purify the ideology for fear that his authority may otherwise be shaken. As such, new arrangements often become possible only after the old ruler is replaced by a new ruler. A recent example is the change from the collective system to the household farming system in China under the leadership of Deng Xiaoping who suffered under Mao's rule (Lin 1987).

Bureaucracy and the Agency Problem. By definition, the ruler must have some bureaucratic apparatus at his disposal to implement law and order, collect taxes, inflict punishment, secure national sovereignty, and provide other services. Each of the bureaucrats in these government agencies is himself a rational individual. His interests never completely coincide with the ruler's. Of course, the ruler will attempt to monitor the behavior of his agents, implement a reward system that promotes loyalty to the ruler, and inculcate an ideology that encourages honest and unselfish commitment to one's office. However, bureaucrats will not be perfectly controlled, and bureaucratic discretionary behavior cannot be completely eliminated. The result is that a policy designed to maximize the ruler's utility will more or less be distorted to favor the bureaucrats themselves. The ability of the ruler to maximize his own utility and institute an efficient arrangement depends on how much the bureaucrats take the ruler's goals as their own. Agency problems therefore exacerbate the bounded rationality of the ruler and increase the transaction costs of ruling the state. A new institutional arrangement will not be adopted if the additional profits from so doing will be dissipated by bureaucratic discretionary behavior.

Group Interest Conflicts. As noted by Schultz (1978, p. 10), "The individuals who govern are politically dependent on the support of particular population groups that make the regime viable. Economic policies are in this context a means to maintain political support." Changes in an institutional arrangement often redistribute wealth, income, and political power among various groups of constituents. If the losers in the change do not receive compensation, and in most

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cases they do not, they will oppose the change. Therefore, the ruler will be reluctant to institute a change for fear of eroding his own political support, if the losers in the institutional change are the groups whose support the ruler relies on. As Feeny (1982, chap. 7) noted in reference to Thailand between 1880 and 1975, the fact that the elite stood to gain little from technical and institutional changes meant that the necessary actions were not taken by the government. Consequently, the development of agriculture was retarded.

A powerful group may also promote new arrangements that redistribute income to itself, even though this redistribution would be detrimental to the growth of the economy (Olson 1982, Muller 1983). Furthermore, the monopoly power of the ruler is constrained by potential rivals, internal or external to the state, who will provide the same set of services. The groups of constituents that have good access to the rivals of the ruler will have high bargaining power. The ruler will hence provide greater services to these groups. A change will not be instituted if it drives these constituents to the ruler's rivals or if the benefits that the ruler gains from the remaining constituents cannot compensate for the harm that the ruler incurs due to the loss of constituents (North 1981, chap. 3).

Limitation of Social Science Knowledge. Even if the government has the intention of introducing an institutional arrangement to restore disequilibrium, it may fail to institute the correct arrangement because of the inadequacy of social science knowledge. Many underdeveloped countries adopted Soviet-style central planning in the early 1950s. It is hard to prove how much of this policy was a direct result of the prevailing social knowledge at that time. Nevertheless, as summarized by Bauer (1984), the principal components of development literature of the early postwar years emphasized the necessary role of comprehensive government planning for underdeveloped countries in achieving economic growth. Drawing on the history of the last three centuries of England and other Western economies, Schultz (1977), nevertheless, found that the alteration and establishment of various political and economic institutional arrangements in a society were induced or shaped by the dominant social thought in those times. However, the dominant social thought may not be the "correct" one in the sense that it will lead to a higher growth rate of income and a more desirable income distribution. Fundamentally, social thought is also limited by the bounded rationality of the human mind. Yet, it is safe to predict that the damage will be smaller if the dominant social thought is a result of full interaction and consultation among a wide spectrum and various disciplines of social scientists and not a result of a handful of authorities.

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Conclusion

In concluding this paper, some remarks are in order about the relation between cultural endowments and economic growth and the role of government on economic growth.

A nation's cultural endowments, such as its values and customs, are informal institutional arrangements. They, like formal arrangements, are manmade devices that satisfy human needs. In a stationary economy, cultural endowments are likely to be in a state of equilibrium and often become sacred. However, as the economy grows, some of the original arrangements will become obsolete because new arrangements are required to take advantage of the opportunities that arise in providing more services or reducing transaction costs. Although the process of institutional innovation is plagued with externality problems, some institutional entrepreneurs will eventually emerge, and new efficient arrangements will be innovated, as long as the expected profits outweigh the costs. In this sense, values, customs, and other elements of cultural endowments are neutral in the process of economic growth. This does not mean that a nation's cultural endowments do not matter; it only means that *they do not determine a nation's future.* A nation cannot count on its cultural endowments for economic growth, no matter how favorable they are to growth.

A nation need not stop developing its economy until the establishment of a set of values or mores that are congruent to growth. A nation's cultural endowments will be changed when it is profitable to do so. The work ethic of the Japanese, for example, is praised all over the world today. However, this was not always so, as a quotation from a report written in 1915 by an Australian expert invited to visit the Japanese government illustrates:

> My impression as to your cheap labour was soon disillusioned when I saw your people at work. No doubt they are lowly paid, but the return is equally so; to see your men at work made me feel that you are a very satisifed easy-going race who reckon time is no object. When I spoke to some managers they informed me that *it was impossible to change the habits of national heritage* [emphasis added].[32]

The "habits of national heritage," which are incompatible with an industrial society and are supposed to be impossible to change, have

[32]This paragraph is quoted from Srinivasan (1984, p. 53). Srinivasan in turn quotes it from Bhagwati (1983).

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been completely changed in Japan in just one or two generations.[33] The key to this change is the profits that individuals can now capture for their contributions to work and to the innovations of new attitudes, values, and other formal and informal arrangements. No individuals are bounded by cultural endowments in seeking to improve their own lots. They are bounded only by the lack of opportunities that promise large enough profits for undertaking changes.

More important for a nation's economic growth than cultural endowments are the policies of the government. Since government provides the framework of order on which the rest of economy is built, and rational behavior is impossible without the ordered stability that government provides, the importance of government policy for economic growth cannot be overemphasized. However, as noted by Lewis (1955, p. 376), "No country has made economic progress without positive stimulus from intelligent governments. . . . On the other hand, there are so many examples of the mischief done to economic life by governments that it is easy to fill one's pages with warnings against government participation in economic life."[34] So what distinguishes an intelligent government from a nonintelligent one? The answer probably lies in how the government guides individuals' incentives.

Individuals will always seek opportunities to benefit themselves under any circumstance. However, for the development of an economy, it is necessary, at the risk of overgeneralization, to have a system that encourages individuals to actively seek and adopt *new profitable productive income streams*. Moreover, it is necessary that the system allows individuals who invest their time, effort, and money in these activities to reap the profits for themselves.[35] Institutional arrange-

[33]For many other examples, see Bauer (1984), Bauer and Yamey (1957), Schultz (1964), and Lewis (1955).

[34]A similar view is also expressed by North (1981, p. 20), "The existence of a state is essential for economic growth; the state, however, is the source of manmade economic decline."

[35]Two categories of profit-seeking activities can be distinguished. The first category includes rent seeking (Krueger 1974) and directly unproductive profit seeking (Srinivasan 1985). These activities include tariff-seeking lobbying, tariff evasion, seeking of revenues generated by given tariffs, premium seeking for given import licenses, and so on. Once a government starts to intervene in trade or other economic functions, individuals will engage in activities to influence government policies in their favor. These activities promise profits to those individuals engaging in them. However, these activities use up resources, shrink production possibilities, and produce no goods or services for the society as a whole. Such types of profit-seeking activities will result in stagnation instead of growth. The second category is productive profit seeking, including investments in physical and human capital, innovating new technology and efficient institutional arrangements, and so on. These activities enlarge the production possibility frontier and increase the supply of goods and services to society. The economic growth of a nation is impossible without such productive profit seeking.

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ments with such a character—or more explicitly, a system of clearly defined and well-enforced property rights in goods, factors of production, and ideals—are inherently public goods. They cannot be established by the induced institutional innovation process. Without the whole-hearted support of the government, such institutional arrangements will not exist in a society.

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The Implementation and Integration of Innovations in Soviet-Type Economies

Gertrude E. Schroeder

Introduction

Karl Marx believed that technological progress would flourish under socialism, once the capitalist fetters on production were burst asunder and the alienation of workers from the production process was removed. Oskar Lange argued that innovation would flower under his model of market socialism, because firms would have no motive to withhold innovation in order to preserve the value of old assets, as was the case with capitalist firms. Soviet spokesmen have long maintained that centrally planned socialism would prove superior in managing the innovation process, because it could centralize research and development, avoid wasteful duplication of effort and mistakes, remove all barriers to rapid dissemination of information, and mobilize resources to implement the most "progressive" new technologies.

Instead, decades of experience in the Soviet Union and Eastern Europe have shown that the institutions of centrally planned socialism have seriously fettered the innovation process. The result has been persistent technological lag compared with Western market economies. This situation, much deplored by the political leaderships in these countries, seriously reduces their ability to improve living standards of their people and limits the expansion of East-West trade. The lag is large and has been growing, at least in the past 15 to 20 years. Taking GNP per employed worker as a rough gauge of relative levels of technological development, we find that in 1987 the level of the USSR and Eastern Europe combined was about half that of the major OECD countries as a group; it was about 56 percent

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in 1960.[1] Consumption gaps are similarly large and have been widening in comparison with Western Europe and Japan. According to Jan Winiecki (1988, pp. 142, 161), the share of these countries' exports of manufactures in total exports to the West has been low and falling, as has their average price. Finally, numerous studies of specific industries and technologies support these general conclusions.[2] To cite one example, the Birmingham in-depth study of eight key technologies found no evidence of a substantial dimunition in the overall technology gap between the USSR and the West; in the science-based technologies (computers, electronics, advanced chemicals), however, the gap clearly had widened (Amann, Cooper, and Davies 1977, pp. 47–66).

Growing technological backwardness of Soviet-type economies relative to the West is not the result of their failure to allocate resources to the task. Shares of national product devoted to investment and education in Soviet-type economies tend to be large relative to countries at comparable levels of development, as does the share devoted to research and development (R & D) in the USSR (Hanson and Pavitt 1987, pp. 53–56). Rather, the explanation lies primarily in the economic institutions typical of these economies. Pervasive secrecy and lack of personal and civic liberties, along with the collectivist bias of political ideologies, are contributing factors. The key institutions that directly affect the innovation process are public ownership of property, central dictation of outputs and allocation of material and capital inputs, hierarchical organization of the production and distribution process, administratively determined prices, and a system of incentives tied to meeting production targets. Curbs on freedom have limited the exchange of technical information so critical to innovation. The collectivist bias manifests itself in a revealed preference for subordination of individual interests to those of society, for collective rather than private endeavors, and for formal cooperation rather than free competition in the economic process.

Since the mainspring of technological progress is innovation, defined here simply as the discovery, development, and diffusion of new production processes and products, we need to know why socialist institutions and ideologies have proven so inimical to rapid innova-

[1]Calculated on the basis of data given in CIA, *Handbook of Economic Statistics, 1988* (CPAS 88–10001, September 1988), pp. 30–31, 48–49, 58. For similar estimates of the gap, see Bergson (1987) and Bolotin (1988, p. 134).

[2]With regard to the USSR, see Amann, Cooper, and Davies (1977); Amann and Cooper (1982); and Hanson (1981, pp. 39–48). Many other sources are cited in Hanson and Pavitt (1987, pp. 68–76). With regard to Eastern Europe, see Hanson and Pavitt (1987, pp. 71–76), Gomulka (1985), and Poznansky (1988).

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tion. This theme is treated in many different ways in a vast and largely uncontroversial Western literature.[3] In recent years, Soviet and East European scholars also have been saying many of the same things. Economic reforms perennially introduced in these countries in recent decades have attempted to remove the sources of the drag on innovation. This paper focuses on economic institutions and the impact they have had on the behavior of organizations, firms, and individuals. It first examines the innovation process and its consequences in the socialist centrally planned economy as exemplified by the experience of the Soviet Union and Eastern Europe, then considers the reasons why successive waves of economic reforms have failed to change the outcomes in any significant way, and finally examines the latest spate of reform programs and the likelihood of a breakthrough. For specific details, we refer to the Soviet Union for the most part. While institutional details differ among the countries of Eastern Europe, their experience has been similar to that of the USSR.

The Innovation Process and Its Consequences

Since Soviet-type economies lack a spontaneous mechanism to generate technical progress, most innovations must be "introduced" into the economy administratively. The mechanism for accomplishing this task has been the annual and five-year economic plans. In turn, an organizational structure has had to be created to formulate and implement the plans and to monitor the results. Since business firms—the producers and users of new technologies—could not be counted on to behave like robots, incentive schemes had to be devised to enforce the center's priorities.

Organization for Innovation

Innovation has been directed from the center. Typically, the key players have been a State Planning Committee, a State Committee for Science and Technology, and numerous ministries delineated by branch of industry and sector (ferrous metallurgy, machine tools, construction). Interacting with one another and with academic research institutes, these central agencies have had to forecast scientific and technological developments; select the technologies and products to be introduced via the plans; estimate the concomitant requirements for trained personnel; assign R & D tasks to appropriate institutes typically subordinated to ministries and allocate the necessary

[3]See, for example, Berliner (1976); Amann, Cooper, and Davies (1977); Amann and Cooper (1982); Hanson and Pravitt (1987); Gomulka (1986); Hanson (1981, pp. 49–80); and Levine (1983).

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resources; assign to enterprises the tasks for producing new machines and products and for introducing new processes and allocate the necessary resources; establish new institutes and enterprises as required; establish the structure of rewards and penalties for complying with assigned tasks; fix the rules for pricing the innovations; and devise ways to assess the results. Out of sheer necessity, this gargantuan task has become routinized and thoroughly bureaucratized.

This "center knows best" approach to innovation has proved to be seriously defective. Many aspects of technological backwardness of the Soviet-type economies stem from such a predilection. The process of scanning the technological frontiers, selection, prioritization, and choice of executants by higher government echelons has imparted a strong conservative bias to innovations and fostered uniformity rather than diversity. Thus, despite a relatively large R & D resource base, innovations have tended to be imitative of developments abroad rather than reflections of domestic discoveries. They also have tended to be evolutionary and incremental rather than revolutionary in nature. Ministries have been instructed to implement a "uniform technical policy" for their sectors and have been motivated to do so. Because central planning needs stability and predictability to produce even tolerable results, agencies have shown a strong proclivity to shun the radically new and to suppress major spontaneous innovations from below that might prove disruptive. The innovative process has been overwhelmingly supply-driven, with little of the feedback and impetus from the demand side that has driven innovation in the West. Centralized management has resulted in an inordinate prolongation of the discovery-development-implementation process, so that many innovations are already obsolete by world standards when introduced. In the USSR, for example, lead times typically are more than double those in the West.[4] This holds true, although to a somewhat lesser degree, for technology purchased abroad.[5]

Central administration of innovation has had other adverse consequences. Because the administrative task is eased when the number of units is small, both R & D and production have tended to become ever more concentrated; the administrative factor has been reinforced by the planners' conviction that greater concentration always brings greater efficiency. But concentration has resulted in monopoly in many areas and a near absence of the numerous small

[4]See, for example, Hanson (1981, pp. 39–43), Martens and Young (1979), and Zaichenko (1988).

[5]See Hanson (1981, pp. 186–208). Evidence for Eastern Europe is given in Winiecki (1988, pp. 171–204).

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firms that have hastened innovation in the West. In addition, planners have been prone to introduce major new technologies by establishing large new firms, but the diffusion of these technologies to older firms has been slow and difficult to manage. Although the USSR has established an All-Union Institute for Scientific and Technical Information to centralize the collection of knowledge from abroad, the lengthy process of dissemination to potential users often renders the knowledge obsolete. Moreover, organization of the innovation process through sectoral ministries has created serious barriers to the transfer of information outside the sector and hampered the diffusion of technology across ministerial lines.

A notable feature of the organization of R & D is the separation of the activities of the numerous research and design organizations from the introduction stage of the innovation cycle. Typically subordinated directly to industrial ministries, these organizations have little or no contact with the ultimate producer of the technologies they are developing; indeed, the ministry typically selects a producer only after a project has been completed. Designers are similarly cut off from potential users of the end product of their design. All this has given a kind of "ivory tower" atmosphere to this stage in the innovation process, with consequent delays, mismatches, and waste of effort. The mission-oriented institutes exist to serve their respective sectoral ministries and tend to be isolated from developments in related areas. Similarly, selection of potential producers and users of a new technology tends to have a "departmental" bias, as Soviet sources would describe it.

The services performed by research and design organizations usually have been priced at the cost of the labor and materials involved or more recently on the basis of the estimated "useful effect" expected from the project (Bornstein 1984). The first approach provides no incentive for efficiency, and the second leads to exaggeration of the price of such services. Inventors (individuals or groups) may patent a novel technology, but the patent certificate (at least in the Soviet Union) carries no right to exclusive use; rather, the inventor is paid a lump sum fee related to the estimated "useful effect" of his invention, with a low ceiling imposed (Martens 1982). The employees of research and design organizations typically are paid salaries in accord with centrally set scales. Bonuses have been related to fulfillment of the organization's budget rather than to completion of projects, an arrangement that encouraged proliferation of projects. Employees of design agencies often were rewarded by the number of designs, which encouraged triviality and low quality. Efforts to shift the basis of rewards to potential or actual "economic effect" of the individual's

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or group's work have not solved these problems and have created their own perversities. Finally, a relatively egalitarian approach typically was used in the distribution of group rewards among members.

The Position of the Business Firm

Probably the most serious drag on rapid innovation in Soviet-type economies is to be found in the behavior of the enterprise. The socialist business firm has turned out to be notably risk-averse, as predicted some 70 years ago by Ludwig von Mises. As he put it, a firm's behavior stems from its "position in the economic process." In Soviet-type economies, the firm is state-owned; as a consequence there are no capital markets for bundles of assets (shares in firms), and the *usus fructus* property rights accorded the firm out of administrative necessity have been greatly attenuated. The firm has not had to find customers for its products or seek suppliers for its material inputs. Its capital has been provided free or at a nominal charge, and funds for expansion or modernization have been based largely on investment decisions taken by the central planners. Organizationally, the firm is formally subordinated to its ministry, which plays a crucial role in the fortunes of both the firm and its managerial personnel. It has had little leeway either in fixing the prices for its products or in deciding the disposition of its profits. Finally, firms have had to function in an economic environment of taut planning and in a perennial sellers' market.

The firm's position, however, has been one of extraordinary security, necessitated by the logic of central planning and allocation of resources (McAuley 1985). Because economic competition has been absent, the firm need not fear a loss of market shares to others. If its products are of low quality or obsolescent, they could be "sold" anyway through the allocation process. The firm's principal routine problem has been to obtain essential supplies from chronically malfunctioning distribution channels. But the firm's manager knew he could count on assistance from his superiors in the hierarchy, as well as their tolerance of a network of informal ties, often semilegal or illegal. If the firm failed to make the planned level of profits, or even made losses over a protracted period, it could count on the banks and the bureaucracy to pay its bills or write off its debts. Bankruptcy posed no threat, even though the laws permitted it. Thus, the firm faced a soft budget constraint. With such an institutional environment, it should not be surprising that business firms have shied away from innovation "as the Devil shies away from incense," as Leonid Brezhnev once put it.[6] Rather, one might marvel that the centrally

[6]*Pravda*, 31 March 1971.

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planned economies did as well as they have in generating technical progress.

Having sketched the institutional framework, we next examine some specific features that explain the enterprise manager's behavior with regard to innovation. Despite the centralized approach, the authorities did permit and even encourage firms to be innovative both within and outside the plans. In practice, however, spontaneous innovations typically have been undertaken to cope with chronic supply problems and only if they could be concealed from the authorities. If revealed, cost-cutting or output-enhancing innovations would lead to higher plan targets in the future—the consequence of the "ratchet" approach to planning (Furubotn and Pejovich 1974b).[7] The manager's ability to implement spontaneous innovations, though, was limited by a deficient supply of information about technological opportunities and uncertain access to requisite material inputs, which might be different or of higher quality than his routine allotments. If his firm's own research laboratory came up with a promising new product that was patentable, implementation had to await successful clearance through the bureaucracy—a slow and uncertain process. When foreign technology was purchased, the firm not infrequently found that the new machine did not fit well in an old plant, that employees had to be trained to use it, and that needed auxiliary materials were not available domestically. Problems such as these contribute to a pervasive attitude that innovation is not worth the bother.

Perhaps the greatest impediment to innovation at the level of the firm, however, lies in the system of incentives—the risk/reward assessment that the manager has to make. Typically, the success of the firm and the bonuses of its managerial staff have depended on its ability to meet plan targets for output, measured variously (gross value of output, sales, physical units) and calculated monthly, quarterly, and annually. The bonus rules were structured so as to impose a heavy penalty for even a small underfulfillment of target, a sizeable reward for meeting the target, and only a small reward for going above it (which was deterred in any case by the threat of the "ratchet").[8] Introducing new machines, processes, and products disrupts production routines, as production lines are shut down while the novelty is assimilated. The disruption is likely to be greater, the more radical the innovation. Thus fulfillment of the production plan is jeopar-

[7]Gomulka (1986, pp. 15–16) makes a similar point with regard to East European experience.

[8]These matters are discussed in depth in Berliner (1976, pp. 397–423).

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dized, along with the bonuses for managers and workers. The assorted special bonuses directly rewarding innovation did not provide sufficient offset. So risk-averse managers dragged their feet. Even if an innovating manager somehow avoided plan shortfall, his reward was small and the risk large. Not being an owner, he of course could not capture reward through enhancement in value of the firm's assets.

A further deterrent to efficient innovation in enterprises stems from the inability to assess the real payoff, given the pricing distortions that prevail in the Soviet-type economies. Indeed, the pricing rules that pertain to new products have encouraged spurious innovations and contributed to inflation. As noted earlier, new products are priced either at cost plus a fixed profit markup or on the basis of estimated "useful effect." Faced with strong administrative pressure to produce new products, managers have been led to make minor changes in old products, classify them as "new," and assign them high prices. This practice facilitates meeting output plans expressed in value. Spurious "new" machinery finds customers anyway, because they have little option, and incentives to minimize investment costs are weak. On the other hand, pricing rules have deterred the introduction of genuine new products, especially when economic reforms have raised the importance of profits in the manager's calculus. He often finds it much more profitable to produce old products with high "permanent" prices set when they were new and low current costs resulting from mass production.

Finally, firms in socialist countries have not been spurred to innovation by the threat of competition, either domestic or foreign. While rewards to innovating firms have been small, the penalty for the noninnovators has been largely absent. The "invisible foot" (Berliner's words) of competition for survival that has been a powerful spur to innovation in market economies has been lacking; the substitution of "socialist competition" and administrative pressure has not been an effective substitute. With foreign trade planned by the center, firms have not had to compete for planned exports, and imports have been arranged to supplement rather than replace domestic production.

The Treadmill of Reforms in Soviet-Type Economies

During the 1960s and 1970s, both the Soviet Union and the countries of Eastern Europe were engaged in varying degrees in a seemingly endless process of modifying the institutions and working arrangements of socialist central planning.[9] These economic "reforms" were

[9]There is a large literature on these reforms. For the USSR, see, for example, Hewett (1988, pp. 221–56) and Schroeder (1979, 1982). For summary treatment of Eastern Europe, see Bornstein (1977) and Lavigne (1975).

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aimed at raising efficiency in general and obtaining a product mix that better satisfied both domestic and foreign customers. An explicit objective of the reforms, however, was to speed up and make more effective the introduction of new technologies, processes, and products. This focus was particularly evident in the 1960s, when the political leaderships in these countries became aware that their economies were only feebly benefiting from a "scientific-technological revolution" that they perceived to be taking place in the West.[10] Although technological borrowing was seen to be essential, the reforms aimed to create a milieu more conducive to the effective introduction, adaptation, and rapid diffusion of foreign technology as well as to spur indigenous innovations. Although the reform programs differed among countries in timing, specific provisions, and extent of implementation, they took similar approaches in regard to making the innovation process more effective. One common approach was to reorganize structures concerned with scientific-technical progress at various levels in the administrative hierarchy. Another common theme involved measures designed to improve the process of forecasting scientific and technical developments and planning for the implementation of targeted "progressive" innovations. A third feature concerned attempts to find more effective incentives for researchers and designers of new products. Finally, most of the reform programs included provisions to revise incentives at the enterprise level to overcome the manager's manifest aversion to doing something new. The reform programs often were modified in the process of implementation because they were not yielding the desired results, most prominently on the innovation front.

To give insight into the approaches taken to solve the innovation problem in these reform programs, we take the case of the Soviet Union. There, the major reforms that directly or indirectly addressed the innovation process occurred in 1965, 1968, 1973, and 1979. The 1965 reforms applied generally to the industrial sector, and the 1968 reforms applied them in detail throughout the R & D and innovation process.[11] The thrust of both decrees, however, was to retain the *idee fixe* that the process must be managed from the center. The 1965 reforms created a seemingly powerful State Committee for Science and Technology (Gostekhnika) charged with overseeing and facilitating innovation throughout the economy. Together with the State Planning Committee (Gosplan) and the newly restored industrial

[10]For an in-depth assessment of the political factors involved in managing technical progress in the Soviet Union, see Parrott (1983).

[11]For details, see Nolting (1976).

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ministries, Gostekhnika was directed to prepare long-term forecasts of scientific-technical developments to provide a "scientific" basis for the annual and five-year economic plans. Coordinated and integrated programs were to be prepared in detail and incorporated in a separate section of the plans, something not done earlier. Programs deemed most promising were to be accorded priority, planned in detail as separate "complexes," and implemented through appropriate plan targets and resource allocations to R & D organizations and enterprises. The 1979 decree, in effect, reiterated these approaches, placing even more emphasis on the importance of planning and implementing scientific-technical programs through these "complexes."[12]

The several reforms also reflected a conviction that revisions in organizational forms held the key to solving the innovation problem. In addition to establishing Gostekhnika, the reform decrees, particularly the 1968 decree, made several changes in the way the R & D stages of the innovation process were organized. One set of changes aimed to put under a common management all research and design institutes engaged in developing specific lines of related technologies (e.g., for improving the technology of steelmaking); such "complex scientific research institutes" were subordinated to individual ministries. A second organizational innovation addressed the rift between R & D and production long characteristic of Soviet arrangements. A new form—the Science-Production Association—was created to integrate research institutes, experimental facilities, and production units under a single management. In theory, these associations, each directed by a head research institute, were to focus on the development and introduction of new technologies into production rather than on production alone. At the end of the 1970s, there were some 200 such entities subordinate to particular ministries, mostly in the machinery industries.[13]

The 1968 decree also introduced complicated arrangements for financing R & D, for carrying it out, and for rewarding performers. Essentially extensions of earlier initiatives, these arrangements called for a reduced role for the state budget and a greater role for clients in financing projects; for making research institutes independent and self-financing; for a large-scale extension of contracting between performers and customers; and for evaluating performance and

[12]For details, see Bornstein (1985).

[13]For a good discussion of the experience with these associations and with organizational approaches in general, see Cocks (1983).

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rewarding employees in accord with the estimated "economic effect" of their work.

With regard to the industrial enterprise, the 1965 reforms aimed to fundamentally alter its traditional attitude toward innovation by granting it somewhat greater leeway for decisionmaking, especially in the areas of managing its labor force and small-scale investments; reducing the number of centrally set plan targets; establishing new enterprise investment and bonus funds formed from profits; and tying the size of these funds and the bonuses of managers to success in meeting plans for sales and profitability. The underlying premise was that the focus on sales would spur managers to improve quality and produce new products to please customers and that the greater stress on profits would induce managers to cut costs by adopting new technologies. Also, possession of the firm's "own" investment fund was supposed to encourage managers to buy new machines and to be more demanding about their quality.

When these hoped-for gains were not evident, the government responded with a stream of reforms of the reforms. In 1973, new rules required enterprises to meet fixed targets for raising the share of high-quality (mainly new) products in total production and added that target to the list of determinants of incentive funds and bonuses. Various changes were made in the rules for pricing new products. Ministries were allowed to set up funds to compensate innovating enterprises for losses in bonuses during the course of mastering new production techniques or products. The 1979 decree required ministries and their subordinate firms to shift to complete self-financing of all outlays, with profits to be shared between the ministry or firm and the state budget in accordance with specified rules. This scheme met stiff opposition and was only partially implemented.

These many alterations in organizational forms and the rules of the game over some two decades failed to produce a more technologically dynamic economy, and the gap with the West evidently widened. The new organizational forms and incentive arrangements soon became enmeshed in the routine of central planning, which was made even more difficult by the penchant for grafting the separate planning of assorted "complexes" onto established procedures. Firms behaved much as before with regard to innovations. Indeed, by increasing uncertainty, the frequent alterations in rules may have made managers even more risk-averse. The failure of the many alterations—each seemingly sensible in itself—to achieve their overall objectives stems from the fact that, taken as a whole, they left the system intact. Most important, the position of the business firm in the economic process was not changed in any essential way. The

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firm's property rights were the same, its production autonomy became even more fettered, it faced no competition, and its incentives remained oriented toward pleasing administrative superiors rather than customers, with whom it still had little contact in any case. This unfavorable institutional environment also hampered the assimilation and diffusion of Western technology that was imported in large quantities during the period.[14]

While the reforms in the Soviet Union amounted to mere tinkering with the system of socialist central planning, one East European country—Hungary—introduced sweeping changes that seemed to have the potential to create a new system conducive to faster technological progress. The New Economic Mechanism (NEM) introduced in 1968 appeared even radical. It abolished directive targets for firms, forced them to find their own customers and suppliers, made price-fixing more flexible, tied the firm's success and viability to its profits, introduced profit-sharing, and permitted firms to engage in foreign trade. The idea was to create a "socialist, regulated market economy," in which Hungarian firms were expected to behave relative to innovation as they did in the West. But after a dozen years of the NEM no breakthrough had been achieved. Using a framework developed by Christopher Freeman (1982), Hungarian economist A. Abonyi (1981) concluded that the reforms failed to create three essentials for an innovative industrial sector: a strong scientific and technically oriented environment for firms, a strong professional in-house R & D capability, and the presence of compatible technological levels in backward and forward linkages.[15] Abonyi attributes this failure to the continued large role of the central planners in R and D and investment, the many conflicts among regulating agencies and their regulations, and a continued orientation of enterprises toward bargaining with government agencies rather than toward the market. Tamas Bauer (1984, p. 53), a leading Hungarian economist put the outcome thus: "We have departed from the system of plan directives, but have not arrived at the harbor of a regulated market economy."

The "Radical" Reforms of the 1980s

Still another wave of economic reform has now engulfed the socialist countries. Beginning in the early years of this decade, Hungary modified its NEM through successive legislative acts, permitting more privatization and attempting once again to create a market

[14]See Hanson (1981, pp. 186–210) and Hanson (1985).

[15]See also Gomulka (1986, pp. 49–50).

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environment for state enterprises (Marer 1986). In Poland, Hungarian-type reforms have been introduced in stages by legislation, although practical implementation has been severely hampered by political factors (Fallenbuchl 1988). In the second half of the decade, these pioneers were joined by Bulgaria, Czechoslovakia, and the Soviet Union with programs that closely resemble one another. In all countries, the reforms aim to remove the barriers to innovation that have characterized their economic systems in the past, particularly at the enterprise level. The architects of the reforms declare that this task is to be accomplished by creating a competitive market milieu for business firms in an economy that, nevertheless, is to remain "socialist." We examine the innovation-accelerating potential of these reform packages as now adopted, taking the Soviet Union as a case in point. We also look briefly at Hungary.

Soviet Reforms—Description

Since becoming General Secretary in March 1985, Mikhail Gorbachev has launched a self-styled "radical" economic reform that is "revolutionary" in nature. The reforms are designed to attack head-on the problem of the USSR's relative technological backwardness and the threat it poses to its status as a superpower and as a model for successful socialism. Gorbachev puts the matter directly: "In our country, scientific and technical progress is slowing down . . . mainly because of the economy's lack of receptiveness to innovation. . . . The chief question for the theory and practice of socialism is how, on a socialist basis, to create more powerful stimuli than under capitalism for scientific-technical and social progress."[16] The provisions of the reforms are laid out in a set of General Guidelines, 10 government decrees, and a Law on the State Enterprise, all adopted in mid-1987. They are to be fully implemented over the next several years.[17] With regard to the development, introduction, and diffusion of innovation, the provisions of these documents alter the approach to central planning, create new organizational forms, and substantially change the milieu of business firms. Other legislation significantly enlarges the scope for economic activity by private individuals and producer cooperatives.[18]

In accord with the stated intent to "strengthen centralized planning," the reforms enlarge the role of central agencies in shaping the

[16]*Pravda*, 26 June 1987.

[17]The complete package of reforms is described in Schroeder (1987).

[18]*Pravda*, 21 November 1986 and 8 June 1988.

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direction of technical progress. Gosplan is required to develop a 15-year "prospectus" for planning that is to be based on scientific-technical forecasts made by the Academy of Sciences and other responsible agencies. Gostekhnika is required to incorporate these forecasts into a "Comprehensive Program for Scientific and Technical Progress," made for a 20-year period and revised periodically. The central agencies are to select the "most promising" programs to be incorporated into the 15-year prospectus and implemented through 5-year and annual plans. Gostekhnika is required to monitor the scientific and technical (S & T) programs of ministries to ensure their orientation toward achieving world levels for key technologies; and ministries, in turn, are to monitor such activity at enterprises.[19]

Besides demanding a sharp rise in the number of science-production associations, the reforms sanction two new organizational forms intended to better integrate R & D and production and to remove bureaucratic barriers to development of technologies that involve several ministries. One form is the State Production Association, an intersectoral body organized to integrate all phases of the research-production-marketing chain for groups of products (e.g., materials handling equipment). The other form is the Inter-branch Scientific-Technical Complex, a collection of research institutes and production enterprises put together to develop selected critical technologies, such as robotics. The reforms also have created several overarching sectoral Bureaus (Energy, Machinery) which oversee, among other things, all ministerial S & T programs for the sector. A new State Committee for Computers and Information Sciences also has been established. Finally, the ministries, while being enjoined to eschew petty tutelage over enterprises and having their staffs sharply reduced, are explicitly made responsible for "ensuring that the product meets world technical and quality standards" and for "developing and implementing branch S & T programs."[20]

The reforms aim to make business firms more receptive to innovations spearheaded from above as well as to encourage spontaneous innovation from below. The new Law on the Enterprise greatly enlarges the production autonomy of firms. The firm now formulates its own production and sales plans on the basis of mandatory state orders and contracts it has concluded with customers and suppliers. State orders, however, are to include "very important types of new products." State orders are supposed to be placed on a competitive basis, and firms supposedly will have to compete for sales of their

[19]For details on these "new" approaches and organizations, see Cocks (1989).
[20]*Pravda*, 1 July 1987.

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remaining production. Firms are also now permitted to engage directly in foreign trade and to retain a portion of hard currency earnings from exports to finance desired imports. "Guided by the uniform technical policy of the branch," firms are allowed to set up in-house R & D facilities and to contract for such services with any supplier. Firms are required to finance all of their operations, including most investment, from sales revenues; if they persistently make losses, they can be declared bankrupt and liquidated. Profits are shared with the state budget on the basis of fixed percentages (normatives), and such normatives also regulate wage payments and the distribution of retained profits. Although the state still sets prices for all important products (fixed for 5 years), firms are allowed to negotiate contract prices and to fix prices for other products, subject to central guidelines and monitoring. Supposedly, the firm also can formulate and implement its own investment program and can negotiate with the banks for financing. The firm remains state-owned and formally subordinate to its ministry, which fixes the rules for awarding managerial bonuses. Finally, the reforms mandate the creation of Enterprise Labor Councils with considerable decisionmaking authority, especially with regard to the use of enterprise incentive funds, and require the workforce to elect managers from the enterprise director to shop foreman, subject to ministry approval with respect to the director.

Soviet Reforms—Evaluation

Gorbachev's package of reforms will not bring the technologically dynamic economy that he so much wants. Although they move in a direction conducive to spurring innovation, the reforms do not adopt fundamentally new approaches or abolish any of the institutions that have fettered innovation in the past. Bureaucratic determination of the directions of technological development and management of the implementation of new technologies are retained and even reinforced. At least in this critical area, the Soviet leadership evidently has no faith in decentralized processes. The new organizational forms set up to plan, coordinate, integrate, and monitor the innovation process can only make matters worse. In particular, the existence of so many overlapping organizations charged with managing technological progress is likely to create massive confusion. Most critical of all, however, is the fact that, despite all the rhetoric about creating competitive markets, the reforms do not do so, and the status of the business firm is not fundamentally altered. Therefore, its behavior in regard to innovation is unlikely to change much. While the firm is accorded nearly complete freedom to innovate, its ability to do so will be hampered by the problems it will have in obtaining materials

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and labor of the required quality. Similar factors will limit its ability to use its expanded investment authority and funds to upgrade its capital stock with machinery of modern vintage, for firms that might produce such new machinery will face similar problems.

The reforms also do not create the powerful incentives, both positive and negative, that drive innovation in a market economy. Production in Soviet industry is highly concentrated already, and the assorted amalgamations fostered by the reforms likely will increase the extent of monopoly or oligopoly. While the ministries are enjoined to "prevent monopoly behavior" by their firms, competition is not created as a consequence. Unless Soviet foreign trade policy changes radically, firms also will not face significant import competition. While the newly authorized producer cooperatives, which have been given wide latitude, are supposed to provide competition for state enterprises, cooperatives hardly will be large enough to operate in sectors that matter most for technical progress. By providing small-scale services, however, they might increase the ability of state firms to innovate. As now, managers of state firms have no ownership stake in the firm. Successful entrepreneurs cannot become rich or have their services bid away because of market appreciation in the value of the firm's assets. Conversely, laggards are not penalized; managers who fail to innovate lose none of their own money, even if the firm goes bankrupt. The requirement for self-finance is supposed to induce managers to chase after profits through cost-cutting or customer-pleasing innovation. Instead, the requirements to make profits well might increase managers' aversion to risk in an environment of weak competition and small personal reward. Innovative activity also may be dampened by the increased uncertainty of the regulatory environment that will accompany implementation of the reforms. Finally, neither the center nor the firm can know the real payoff to innovation unless the prices of inputs and outputs reflect their relative scarcities reasonably well. They will not do so under the approach to pricing now taken in the reform documents.

In the West, innovation is promoted through the relatively easy formation of small businesses and the existence of multiple sources of financing. Under Gorbachev's reforms, state-owned firms are created and dissolved by ministries, as before. The Law on Cooperatives allows any group of citizens to form a cooperative to produce almost any legal good or service. But cooperatives, too, will operate in a highly uncertain regulatory environment. Thus, they are likely to have a short time horizon, reinforcing that bias against risk-taking that seems to be inherent in worker-managed firms for other rea-

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sons.[21] In the state sector also, progress in innovation will not be served by provisions of the reforms that give decisionmaking power over distribution of profits to worker collectives.

Hungary

After more than a decade of operation under the NEM, the economy had failed to generate the expected gains in productivity and innovative capacity. To remedy matters, the government introduced one measure after another in a persistent attempt to create the intended socialist regulated market economy. These measures have sought to create competition and more effective property rights in the state sector and to expand the scope of the private sector. Specifically, a single Ministry of Industry with limited powers vis-à-vis enterprises replaced the several industrial ministries; a movement was begun to break up large state-owned firms, and diverse ownership forms for small firms were sanctioned; private firms were permitted to hire as many as 500 workers, and completely private foreign firms were allowed; many changes were made in the financial regulators (taxes, credit, subsidies); and laws were adopted that created the beginnings of a capital market. Nonetheless, the state sector remains overwhelmingly dominant in the industrial sector, its enterprises still are not subjected to the discipline of the market, and market forces are not allowed to determine many prices. As Bauer (1983, p. 310) put it, the Hungarian economy is "neither plan nor market," and no breakthrough in technological progress or in competitiveness in Western markets has occurred. Another noted Hungarian economist, Janos Kornai (1986, p. 1733), suggests that success may not come unless the system of state ownership of property is fundamentally altered.[22]

Conclusion

As would be expected, the governments in Soviet-type economies have proved able to mobilize resources for investment and R and D on a scale that presumably should have produced rapid technological progress through assimilation of a continuous flow of innovations. At the outset, moreover, these countries were technologically backward relative to major capitalist countries in the West. As Moses Abramovitz (1986) and others have shown, these economies could have been expected to steadily close the gap. While some narrowing did occur in the early years, such has not been the case in the past decade

[21]On this point, see Furubotn and Pejovich (1974a), Bergson (1983), Bonin and Putterman (1988), Gomulka (1986, pp. 62–72), and Brewer (1988).

[22]See also Tardos (1986).

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or two, when the gap evidently has widened. Soviet-type economies now find themselves with sluggish rates of growth and factor productivity and with chronic difficulties in selling their manufactures in Western markets. Thus, the relative payoff to large injections of technology-oriented resources has been small. Experience in these countries also bears out Schumpeter's surmise that socialist economies would be characterized by slow, routinized, and predictable technical change. Such an outcome might be tolerable if there were no capitalist economies around, notably the newly industrialized countries (NICs), to show what can be achieved.

The blame for this outcome can be laid squarely at the door of the curbs on liberty and the particular institutions that have characterized Soviet-type societies. Restrictions on freedom of discourse, movement of people, interactions with the international community, and excessive secrecy have not been conducive to a dynamic innovation process. Even more inimical, however, have been the behavioral consequences of central planning and public ownership of firms. Bureaucratic determination of R & D priorities and strategies, and central management of the entire innovation process have produced costly mistakes, a conservative bias, long lead-times, sluggish response to developments abroad, and a preference for solving problems by reorganizing agencies. Management through multiple hierarchies has resulted in fragmentation of the innovation cycle, which has fostered delays and inflexibility and created bureaucratic barriers to diffusion. Propertyless managers of firms oriented toward meeting the demands of their organizational superiors for current production have been reluctant to innovate. Weak connections with suppliers and customers and a seriously defective price system have deprived managers of the information needed to search for and evaluate the return to developing a new product or introducing a new production technology, even if they were willing to do so. These obstacles to speedy innovation adversely affected both the development and diffusion of indigenous technology and the payoff to technology imported from abroad.

Successive waves of reforms undertaken by socialist governments have aimed to remove these systemic obstacles to innovation by minor modifications of organizational arrangements and incentive rules, while leaving the basic institutions in place. That strategy failed, and the political leaderships have now come to view the technological backwardness of their economies as being of "crisis" dimensions. As a result, the reforms of the 1980s are much more comprehensive, involving political as well as economic change. In varying degrees, they expand personal and civic liberties, enlarge

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the scope of international involvement, and introduce assorted forms of political participation. Gorbachev's policies of openness and democratization are notable in this regard. The economic reforms in the industrial sector, however, do not root out the old institutions that have impeded innovation and replace them with fundamentally new ones. The sector remains dominated by large, state-owned firms, even though small-scale private endeavors are being encouraged. By and large, governments still control the direction of R & D and investment, and central agencies still play a large role in matters that determine the success or failure of business firms—prices, credits, taxes, subsidies, and various kinds of regulations.

The reforms now occurring in Soviet-type economies do not go nearly far enough to create the environment that has caused innovation to flourish in market economies. The key features of that environment may be summarized as follows: management of R & D by business firms, with the government playing a supportive rather than a directing role; strong incentives stemming from an ability of innovators to capture large rewards if successful and the certainty of large losses for failure to try; and strong competition both at home and from abroad in the race to develop new technologies, particularly those that make large breakthroughs. Institutional change in Soviet-type economies, while moving in the right direction, has yet to be radical enough to create such an environment. Unless this is done, these economies likely will continue to lag, perhaps by growing margins. But to create the needed institutions will entail a redefinition of socialism and perhaps may also require a revolution.

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Liberty, Property Rights, and Innovation in Eastern Europe

Steve Pejovich

The Problem of Comparison

Implicit in the analysis of social systems is the proposition that socialism and capitalism are possible and sustainable institutional arrangements. Marx's prophecy about the inevitability of socialism is based on an untenable philosophy of history. Mises's concept of the impossibility of pure socialism argues for the impossibility of pure capitalism as well. Scientific analysis of comparative systems is neither about the inevitability nor about the impossibility of pure socialism (or pure capitalism). It is more useful to classify social systems as being socialist or capitalist on the basis of their *dominant* institutional arrangements. The real issue is the analysis of the comparative efficiency of alternative institutions.

I hasten to say that it is both narrow and misleading to base a comparison of social systems on the objective of technical efficiency alone. Suppose we come up with a model of technical efficiency that coincides with a benevolent rule of the scientific elite. Are we going to concede that a modern version of the Platonic state would be compatible with capitalism (Albert 1987)? The value of a system is simply not verifiable by econometric techniques and mathematical proofs. The critical factors for evaluating a social system must be the

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effects of its institutions on liberty, human creativity, and new opportunities.

The limits of neoclassical economics in explaining the economic performance of alternative institutional structures are traceable to several factors. First, neoclassical economic analysis describes the output of an economy as a function of the quantity and costs of a set of resources, given the state of technical knowledge. However, there is more to the output than the neoclassical production function. The total costs are the costs required to transform inputs into outputs (the costs of production) and the costs required to carry out exchange (the costs of transactions). The latter are both significant and not invariant with respect to the organizational structures (North and Wallis 1988). Second, neoclassical emphasis is on the effects of private property rights in resources. The choice set and constraints are assumed to be given, while the effects of alternative institutions and positive transaction costs are largely ignored. Finally, neoclassical economics has appreciated the importance of innovation. However, its view of the firm as the unit of analysis and the narrowness of its maximization paradigm have made technical innovation an external phenomenon. Once innovation is made, the given set of choices is adjusted to embrace it. That is, neoclassical analysis deals with innovation after it is introduced in the system.

The property rights literature has applied economic analysis fruitfully to many diverse problems. Viewing the firm as a set of contracts among the factors of production has not only improved our comprehension of economic processes in general, but has also improved our understanding of the generation and diffusion of innovation. One set of institutions may be superior to another set not because it happens to be technically more efficient in terms of the standard maximization paradigm, but because it encourages the flow of innovation with the expansion of the opportunity set.[1] A disruption of the prevailing equilibrium is seen as a trade-off between technical efficiency and the size of the opportunity set. That is, a reduction in the former may be compensated by an expansion in the latter.

The purpose of this paper is to outline a framework to explore the interplay between alternative institutions and innovation at the level of the firm. Institutions are defined here as the legal, administrative, and customary arrangements (rules) that structure repeated human interactions.

[1]Remarks by James M. Buchanan at the Liberty Fund Conference on Socialism, Interlaken, 1985.

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Technology, broadly defined, embodies the prevailing knowledge. The innovator translates knowledge into new choices. The growth of knowledge creates new technological possibilities, while innovation translates them into new wants, attitudes, and behavioral norms. Since the rate of growth as well as direction of new knowledge is unpredictable, the rate of innovation is also unpredictable and its outcome uncertain. The issue of economic progress boils down to the problem of finding a set of institutions that will maximize the flow of innovation.[2] By injecting a novelty into the flow of economic life, the innovator offers the community a *new* choice. The *voluntary* acceptance or rejection of the innovation reflects its evaluation by the community.

The remainder of this paper will discuss the relationship between several different types of property rights and the flow of innovations.

The Freedom to Innovate

In addition to being a risktaker, the innovator has no previous data to fall back on. He must be able to perceive a link between the use of knowledge and desired outcome. Because innovators do not constitute an identifiable class of people within a society, a reduction in the number of people who have the right (which is not to be confused with the ability) to innovate is likely to eliminate some potential entrepreneurs and impede the flow of innovation.

Three important factors determine the pool of people who are free to innovate: the right to choose a type of firm, the right to acquire resources, and the right to use them. An important question is how different property rights affect those three factors.

In a capitalist firm, the owners and their hired managers have the right to acquire resources and to use them to pursue any lawful activity, including innovation. The owners can choose from a variety of organizational structures, from small proprietorships to large corporations, and from cooperatives to not-for-profit firms. A private property, free-market economy places no restrictions on the freedom to innovate.

The right of ownership has been attenuated in capitalist countries, thus interfering with the owner's right to exclusive use of an asset or its transferability. However, the scope and direction of attenuation of ownership rights vary from one country to another. Codetermination laws in West Germany prescribe a very definite method for organizing production in large business firms. License requirements

[2]See Schumpeter (1959).

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for entry into many occupations are quite common in Western Europe. The regulation of pharmaceutical products in the United States offers an example of the consequences of restrictions on the right to use one's assets. As Karl Brunner (1987, pp. 41–42) noted,

> The tragically crippled and deformed babies resulting from the use of thalidomide by pregnant women influenced . . . regulatory policies. The measures implemented raised the costs of development for new products by a large factor. . . . Innovation declined by a sharp margin and the appearance of new drugs sharply contracted. . . . A policy addressed to minimize the probability of bad pharma products maximized at the same time the probability of NOT having useful drugs.

It would be difficult to argue that regulatory policies have no benefits. But they also impose some heavy social costs. Restrictions on the method of organizing production raise the cost of doing business. License requirements reduce the number of people who have the right to acquire resources. Protectionism and monopoly privileges limit one's right to use resources. In general, the attenuation of private property rights to resources restricts the freedom to innovate.

In the Soviet Union, entry into decisionmaking is through membership in the ruling elite. It is a self-perpetuating group from which one departs through death or political disgrace and joins primarily through personal connections. The leadership controls the formation of new enterprises and the allocation and use of resources. The absence of private ownership makes income and other benefits from the state (the monopoly employer) virtually indispensable for the economic survival of individuals. Clearly, the penalty-reward system in the Soviet Union creates incentives for individuals to work toward their leaders' economic and political goals. Economic activity in the Soviet Union thus conforms to the ruling group's perception about political and economic requirements for perpetuating Soviet power.

The Soviet manager (and other employees) does not have the right to acquire productive assets. He has only a limited right to choose how to use resources that have been allocated to the firm. A remarkable book by Vladimir Dudincev, *Not by Bread Alone* (1957), has not aged with the passage of time. It describes the problems of carrying out innovation in an environment in which the potential innovator does not have the right to acquire and use resources. The prevailing property rights in the Soviet Union limit quite sharply the number of people who have the right to acquire resources as well as the number of those who have the right to determine their uses. Moreover, a member of the ruling group who perceives an opportunity for

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a technological innovation must sell the idea first to his colleagues, and then to his superiors.

In Yugoslavia, all people have the right to own business firms in agriculture, retail trade, construction, transportation, catering, and handicrafts. Manufacturing is not included in the list. Restrictions on the size and type of capital assets, the number of workers in a private firm (the maximum is 10), and the lack of bank credit for privately owned enterprises reduce the importance of the private sector in Yugoslavia. In 1985, the percentage of output produced by the private sector was 72 percent in agriculture, 51 percent in handicrafts, 14 percent in construction, 12 percent in catering, 6 percent in transportation, and less than a fraction of 1 percent in retail trade.

Given the prevailing property rights in Yugoslavia, the pool of those who have the right to acquire and use resources in state-owned firms is restricted to the *working collective*. The term working collective is important here. Individual employees can neither acquire productive assets nor determine their uses. Only the working collective as a whole can do so, through its Workers' Council (WC). An employee who perceives an opportunity to innovate must sell his idea to the firm's WC, a group of people who, typically, have diverse attitudes toward risk, limited business experience, inadequate understanding of production techniques and market processes, and different time horizons. This process impedes the flow of innovation. Jaroslav Vanek (1970) and Branko Horvat (1964), among other scholars, have confused participatory democracy within the firm with decisionmaking. The right of all workers to participate in running the firm rules out the right of any individual in the firm to make key decisions. To paraphrase Buchanan, they are all slaves without masters (Buchanan 1987, p. 9).

Until Yugoslavia's adoption of the Constitution of 1974, the firm's director was perhaps the only person who could acquire and use resources to implement new ideas. He had to seek Workers' Council approval for all major, especially nonroutine, investment decisions. However, the director was the only person in the firm capable of formulating investment alternatives and explaining their consequences. Predictably, the managers quickly turned into true captains of the economy, becoming influential and rich. The Party bureaucracy therefore developed a case against the managers, making it one of "technocrats versus the people." The Constitution of 1974 led to organizational and regulatory activities that curbed the influence of market forces through an ingenious method of giving business firms more participatory rights and fewer decisionmaking powers. As a result, the number of people in Yugoslavia who have the right to

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acquire resources and determine their uses has been substantially reduced (Pejovich 1984).

The Reality of Trade-Offs

The firm's opportunity set defines trade-offs by identifying the associated costs of all choices. In addition to standard goods and services, the choice set includes all of the firm's other dimensions that have value. The firm's owner or manager can move along the production frontier, trading one bundle of goods for another bundle of goods. The choice set has two important characteristics: The risk associated with each alternative in the set is known, and all outcomes have precedents.

The immediate effect of a technological innovation is to expand the firm's choice set, to introduce a novelty into the system that has not been experienced before. The resulting uncertainty about the response of economic agents means that innovation has unintended consequences and an unpredictable outcome. The final effect of innovation on both the position and the slope of the new choice set is then uncertain.

An important trade-off then is between innovation and "routine" activities in the choice set. The flow of innovation depends critically on the innovator's right to appropriate the benefits. What are the effects of alternative property rights on the appropriability of benefits?

A successful innovation yields benefits in excess of what the bundle of resources used by the innovator was earning before. Positive gains are created within the system through the emergence of new exchange opportunities and institutional forms that enough people seem to exploit. In a capitalist economy the innovator can appropriate the expected future benefits from his investment in either one lump sum or as a stream of payments. The manager of a firm captures the benefits of innovation in the market for managers, where his current performance determines his future income. The capitalization of the future benefits of a successful innovation into their present market value is *specific and unique* to the right of ownership.

A successful technological innovation provides the innovator with a temporary monopoly position, primarily by creating a gap between average and best technology. The technology gap is an intrafirm, as well as an interfirm, phenomenon. A former chairman of the board of Texas Instruments wrote: "Texas Instruments' most successful research and development efforts are at least ten times better than the company average research and development" (Haggerty 1979, p. 13). In fact, if all firms were able to quickly adapt to new technol-

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ogy, incentives to develop new products and processes would be seriously impaired. The gap between average and best practice endures because it is often costly for firms to learn and evaluate new technology (e.g., the aircraft industry). Some firms make wrong bets about best practice (e.g., Montgomery Ward after World War II). Frequently, the method of organizing production might either slow down or accelerate the firm's rate of adoption of new technology (e.g., American Airlines in the 1980s). In general, imitation of a successful innovation requires expenditures of both resources and time. Thus, the expected length of the imitation lag affects the entrepreneur's choice between routine investments and innovation (Nelson 1981, pp. 1044–45).

The threat of a hostile takeover has a clear and definite effect on the corporate manager. It raises his cost of choosing routine (safe) investments. To alleviate the threat, the manager must continuously search for new investment opportunities and accept the risk and uncertainty associated with them. Given efficient markets for corporate control, the survival behavior of corporate managers is to enhance innovating activity.[3]

Codetermination (labor participates in the governance of business firms) is a major postwar social experiment in West Germany. The codetermination act of 1976 applies to all business firms in Germany that have more than 2,000 employees. Six members of the board of directors are representatives of the shareholders and six are representatives of the employees. The chairman of the board is appointed by the shareholders and has a deciding vote. The law has changed the prevailing relationship among the owners, managers, workers, and labor unions. Those changes, in turn, affect the location of decisionmaking powers, the appropriability of rewards, and the relationship between risk taking and bearing of costs.

Codetermination attenuates the right of ownership because it grants the workers a voice in the management of resources owned by the shareholders. The workers' time horizon is, however, limited to their expected employment by the firm. Unlike the shareholders, who have an unlimited time horizon (because of the capitalization process), the workers can capture the benefits only for as long as they stay with the firm. Moreover, the benefits are not available to them in a lump sum of money but only as a stream of periodic payments. Workers have clear incentives to prefer business decisions that promise larger annual earnings over a limited time period to those policies that maximize the firm's worth. The workers have incentives to push

[3]See, for example, Jensen and Ruback (1983).

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for routine investments. Giuseppe Benelli (1984) has shown that in national and international cross-sectional studies the variations in returns on shares in industries that have been affected by codetermination have been the lowest compared with other industries within and outside West Germany. The evidence is that the attenuation of private property rights in West Germany has raised the cost of innovation.

The Yugoslav system of self-management precludes the capitalization of the future benefits of successful innovations into their present market value. The absence of the right to capture the future value of current investment decisions increases the importance of time horizon in Yugoslavia and raises the rate of interest implicit in relative prices of capital. It follows that the Yugoslav collective has incentives to seek primarily those innovations that increase the near-term cash flow. If the expected life of the innovation exceeds the collective time horizon, incentives to approve a novelty are diminished. Also, the absence of financial markets rules out efficient markets for managers. The Yugoslav combination of state ownership of resources and the right of the collective to capture a fraction of the firm's cash flow reduces the incentives to innovate.

State ownership of productive assets means that the allocation and use of resources serve political ends in the Soviet Union. On the surface, the Soviet manager is free and, in fact, encouraged to propose a technological innovation to his bureaucratic superiors. However, there is a world of difference between the right to make suggestions and the right to do things. At the level of nomenklatura, incentives to innovate are lacking for at least two reasons. First, decisions to innovate are not individual decisions. They are made and reviewed by a layer of committees. Second, an individual who believes in a specific innovation finds the cost of pushing it through the bureaucracy rather high. If the innovation is a success, he will share the benefits with his superiors. If the innovation is a failure, his superiors will blame him.

Given institutional structures in the Soviet Union, it would appear that Soviet planners have few incentives to innovate while Soviet managers have no right to innovate. However, Furubotn and Pejovich (1974) and Pejovich (1983) suggested that the Soviet manager has strong, but not easily detectable, incentives to innovate.

The output performance of the Soviet firm contributes to the Soviet manager's tenure, promotions, and economic well-being. Since input allocations are frequently delivered late, or not at all, or with the wrong specifications, the Soviet manager considers an (unreported) inventory of inputs to be a source of security. His problem of survival

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in the Soviet environment is to find a way to accumulate reserves of inputs in the system, although the firm cannot hold cash balances subject to holding preference and the availability of resources to the enterprise is based on the official allocation of inputs. Given his perception of the cost to the state of acquiring information about the firm's true production capabilities, the Soviet manager is able to create for himself a set of opportunity choices. The origin of this set lies in the difference between the true and approved production functions. The firm's output quota, allocation of inputs, and other variables are based on the approved production function. The manager's trade-off is between additional income (bonuses and promotions associated with producing more than the firm's output quota) and security (associated with adding more inputs to the firm's unreported reserves). The manager's ability to create and preserve the range of choices determines his success or failure in the Soviet system. However, every time the manager surpasses his production quota—and it is important for him to do so—the state revises the firm's production function. As time goes by, the approved and true production functions tend to converge. The Soviet manager could preserve the difference between the two production functions by *raising* the firm's total product schedule and *concealing* the shift from the state. The Soviet manager, therefore, has strong incentives to innovate, provided that he can choose the rate at which the effects of innovation are revealed. Clearly, this requirement eliminates some types of innovation and reduces the flow of others. Yet, the Soviet manager must have been a successful innovator; after 60 years of playing the game, he is still able to overfulfill production quotas.

The Ability to Innovate

Freedom to acquire and use resources is not the same thing as having the power to actually get them. In a private-property, free-market economy, capital markets match the quantity of financial assets demanded with the quantity supplied at prices that reflect contractual agreements on various issues, including risks. The ability to acquire an asset in financial markets depends on the borrower having enough resources to pay for it, and the lender having a bundle of rights in the asset that he is willing to transfer at a price the borrower is willing to pay.

The ability of a capitalist firm to innovate is more likely to be limited by its organizational structure and size than by financial markets. The larger the firm and the more people that have to say "yes" as innovation unfolds, the more costly it is to carry out the

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innovation. A major issue facing the management of a successful firm in a capitalist economy is how to preserve flexibility, creativity, and adaptability as the company gets bigger and its initial vigor yields to the process of maturing. For example, Texas Instruments has grown into a large firm through a series of successful innovations. By the late 1960s, Pat Haggerty, an architect of the company's growth, became quite concerned with the management's ability to sustain the company's rate of innovation. He wrote: "We were worrying a great deal about how to institutionalize the process so that we could be confident that as we grew, we could retain the innovative drive that was requisite if Texas Instruments was going to be able to continue to renew itself" (Haggerty 1979, pp. 9–10). Importantly, the right of ownership and the freedom of exchange provide an institutional framework within which new firms can innovate while maturing firms have an opportunity for rebirth.

Opponents of free-market competition in the West are continually faced with the problem of developing a set of institutions that could alter free-market outcomes with minimal effect on economic efficiency. An important consequence of all those redistribution attempts has been a degree of attenuation of private property rights in assets with predictable (restrictive) effects on the flow of innovation. For example, codetermination in West Germany has raised the cost of running a firm by bureaucratizing its organizational structure. Election procedures for both the directors and managers are long (about 50 weeks) and cost millions of marks. The discussions in the board room are not free exchanges of thoughts, ideas, and judgments. The shareholders' and workers' representatives on the board represent two discrete interest groups. Labor representatives on the board represent those members of the firm who have no claim on the capitalized value of assets. A major consequence of labor participation in the management of business firms has to be a higher cost of equity capital to offset lower return to the holders of stocks and bonds. A major effect of codetermination is an increase in the cost of capital for labor participatory firms and, consequently, a reduction in their ability to innovate (Pejovich 1982).

Foreign loans have dried up. Prevailing property rights in Yugoslavia reduce the ability of firms to seek funds from other firms and individuals. Thus, the Yugoslav firm has only two important sources of investable funds: retained earnings and bank credit. The former is not a likely source of funds for innovation for two reasons. First, there are too many "routine" claims against retained earnings. Second, the prevailing property rights in Yugoslavia raise the cost of retained earnings relative to bank credit as a source of capital for

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risky investment. A loss of retained earnings is borne by the collective, while at least a part of bank debt could be passed on to the next generation of workers. However, as a Yugoslav firm turns to the banking system for investment funds, behavioral incentives of the prevailing property rights reduce the amount of financing from its retained earnings. It was shown elsewhere that each additional dollar the firm borrows from the banking system increases its total investment by less than a dollar. Also, an increase in the amount of bank loans for investment tends to induce the firm to hold a larger percentage of its retained earnings in cash balances (Pejovich 1976, pp. 247–49). The ability of the Yugoslav firm to innovate thus depends on the banking system.

Commercial banks in Yugoslavia are "owned" and operated by enterprises that are also their chief borrowers. The representatives of business firms that "own" the bank control the credit committee. The committee has incentives to make loans that maximize the bank's near-term cash flow. It also has incentives to grant loans whose interest payments over the committee members' time horizon are ensured. Firms have incentives to amortize loans over a long period of time, hoping to capture the benefits from investment while shifting the cost of interest and principal to future workers. A risky venture, especially one that promises returns over a longer period of time, is not a likely winner in the competition for funds.

The ability to innovate in the Soviet Union is limited to those innovators whose projects are approved by economic planners. Managers do not have to create demand to outperform rivals. It is generally easier to do things the old way. An important objective of Gorbachev's reforms is to deal with this problem by opening up the economy to technological innovation. To accomplish that objective, Gorbachev wants to relate the Soviet manager's rewards to the profitability of his firm. To make new incentives operational, the Party leadership must give the Soviet manager enough power to carry out profitable projects. Specifically, the prevailing property rights in capital goods would have to change.

The Soviet manager can use only capital goods allocated to his firm to meet and surpass output targets. Since the firm pays no charge for capital assets in its possession, and the manager considers them a free reserve. Either through successful underreporting of their firms' production functions or through political connections, many managers have an excess of capital relative to their output targets and true production functions. Relating the manager's rewards to the firm's profitability (defined as the ratio of profits to the book value of the capital stock), Gorbachev's reform would change the rules of the

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game. Accumulated reserves of capital assets would become *costly* to hold. The manager would need some definite property rights with respect to the use of his inventory of capital assets.

The emphasis on profitability must give the manager some property rights in controlling the quality and quantity of new investment.

The Integration of Innovation into the Economy

A novelty does not necessarily make people better off. Innovation has to be voluntarily accepted by the community and integrated into the economy, and the right amount of resources must be allocated for its production. Once again, the question is: How and why do different property rights affect the integration of innovation into the economy?

In a private-property, free-market economy, individuals evaluate a novelty in competitive markets. The freedom of contracting incorporates their individual judgments about the novelty into relative prices, which, in turn, tell us whether or not the innovation has enriched the social opportunity set. Thus, Hans Albert (1987, p. 69) writes:

> The power of the consumer . . . does not consist in giving orders for the solution of problems in the sphere of production, but in testing the solutions adopted by the entrepreneurs and in influencing the future activities in the sphere of production indirectly by accepting or refuting these solutions.

Nelson (1981) and Nelson and Winter (1982) have identified two vehicles (competition and quest for knowledge) by which a successful innovation is integrated into the system. The competition argument is as follows. In a private-property economy, monopoly profits attract attention. New firms then enter the industry and join the old ones in competing with the innovating firm. The flow of resources from lower- to higher-valued uses continues until monopoly profits are eaten up. At that point, the community gets the right amount of that which is new. Atomistic competition dominates the spread of innovation where the firms are relatively small or the source of innovation lies outside the industry.

The quest for knowledge argument suggests that the diffusion of innovation also occurs through the growth of firms that can shield, at least temporarily, a new technology from their rivals. The spread of innovation comes through the growth of capital and the market share of the innovating firm. This mechanism for the diffusion of new technology encourages the innovating firm, as well as its rivals, to invest in new knowledge (R&D). It rewards successful firms with

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temporary monopoly power (e.g., the Model T, Polaroid, Beatles, etc.), which is eventually eroded by competitors' investments in R&D.

The integration of innovation in Yugoslavia has three limitations, all of which are attributable to the prevailing property rights structures. First, a successful innovation by a Yugoslav firm creates a larger residual for the collective. The absence of financial markets reduces the speed at which this information reaches other firms. Thus, the cost of information about a successful innovation is high. Second, competition in innovating is limited to existing firms. As information about monopoly gains becomes available, only old firms enter into competition with the innovating firm. The entry of new firms in the Yugoslav economy is costly and slow. Third, business firms in Yugoslavia have a strong bias against adding to their labor force. The residual-maximizing behavior of the imitating firms might call for hiring additional workers. However, new workers in Yugoslavia are more than factors of production; they are policymakers as well. This means that the firm's current labor force has incentives to trade off some pecuniary income that could be obtained from hiring new workers for the security of its common interests.

The absence of private property rights, competitive markets, and relative prices makes it very difficult to discern the process by which innovation is integrated into the Soviet economy. Two factors could be singled out as possible vehicles for the adjustment in resource allocation to a successful innovation. The first factor could be called the "neo-feudal courts." The Soviet system concentrates power in the hands of a very limited number of people at the top of the Party structure. Those people are effectively beyond the rules and laws applying to all other citizens. They promote their "cronies" by putting them into important positions in the Party and government. In effect, they organize their own courts. Members of the court formed around each top leader form their own support groups at regional and local levels of the Soviet power structure. "Information, exchange and decision making usually follow channels inside those courts, circumventing the official institutional organization of the public life, creating inexplicable decision networks" (Kowalski 1987, p. 187). A crucial implication of the existence of this neo-feudal structure in the Soviet Union is that the Soviet manager's interest lies not in the nature of allocative decisions but in *who* has made them. The Soviet manager, as well as other members of the nomenklatura, seek allocative "adjustment" in economic plans through neo-feudal groupings rather than regular channels. The argument points to possible

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responses of the economy to a technological innovation that are, in relative terms, less bureaucratic.

The second factor that might play an important role in the adjustment of resource allocation to a technological innovation in the Soviet Union is corruption. It is a predictable consequence of the shortages of consumer goods, intermediate products, and raw materials. I conjecture that, in the Soviet environment, corruption is a powerful and perhaps necessary instrument for correcting planners' mistakes.

Conclusion

Socialism is supposed to be a workers' movement, but it is not. Codetermination in Germany draws main support from scholars, bureaucrats, and union leaders; redistributive measures in the United States are formulated in think tanks and carried out by bureaucrats; Yugoslav workers have voted with their feet (against self-management) in favor of being exploited by West European capitalists; East European peasants (who have a choice) are staying on their private farms; and Hungarians are proud of their "privatization" schemes.

The purpose of this paper was to redirect the analysis of social systems away from emphasis on technical efficiency and toward qualitative issues such as the effects of different social systems on liberty, human creativity, and, most specifically, innovation. Theoretical and empirical evidence seems to support two conclusions. First, alternative property rights do influence the flow of innovation. Second, the right of ownership and the freedom of contract are more conducive to innovating activity than other institutional arrangements.

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Institutional Underpinnings of Parochialism: The Case of Military Base Closures

Charlotte Twight

Introduction

No major military base closures were implemented between 1977 and 1988, despite the Department of Defense (DOD) recommendation of hundreds of closures and realignments, despite the almost 20 prior years of successful DOD-initiated base closures, and despite the practical allure of saving as much as $2 to $5 billion annually from such closures without reducing national security. Why? This paper seeks some of the answers.

Attempts to close obsolete or inefficient military bases continue to attract academic and political attention—both as a potential source of budgetary savings and as a microcosm of the larger problem posed by distributive politics in a representative democracy. The issue was in the news again in 1988 as key members of Congress struggled—27 years after Defense Secretary Robert McNamara's renowned efforts to streamline the military base structure—to enact legislation to provide statutory underpinnings for a Commission on Base Realignment and Closure, hoping to surmount existing political obstacles to base closures. Meaningful assessment of the likely efficacy of such reform requires analysis of the role of changing institutional constraints in shaping observed degrees of parochialism.

Political science and economics both provide theoretical models that offer significant insight into the base closure issue. Analyses

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grounded in distributive politics (Fiorina 1977; Ferejohn 1974; Mayhew 1974) stress reelection as a driving motive: Self-interested politicians predictably use constituent service in ways that, while furthering their reelection objectives, may undermine government efficiency. The public choice model, on the other hand, suggests rent-seeking efforts by legislators, bureaucrats, and their constituents that often undermine broader societal goals (Tullock 1965, 1967). Both approaches recognize the unique ability of the political process to concentrate benefits while dispersing costs, differentially rewarding politicians who serve constituents' parochial ends—in this case, maintaining local jobs associated with military bases.

Whether to enhance reelection prospects, maximize votes, or maximize power and the perquisites of office, self-interest in these models typically impels politicians to act on what Randall Fitzgerald and Gerald Lipson (1984, p. xviii) have called the "parochial imperative." Recent studies have drawn attention to the role of ideology in shaping politicians' perceived self-interest (Kalt and Zupan 1984; Kau and Rubin 1979), as well as the role of government augmentation of transaction costs in molding the constraints politicians face (Twight 1988; Nordlinger 1981). Still the self-interested politician, responsive to the demands of competing pressure groups, remains the centerpiece of much economic analysis of regulation and the political process (Stigler 1971; Peltzman 1976; Becker 1983).

With respect to base closures, empirical analyses are consistent with both the distributive politics approach and the public choice paradigm. Douglas Arnold (1979, 1987), for example, has shown that key members of Congress have significant ability to influence DOD decisions regarding military base closures and new base locations. Studying the DOD's Army and Air Force base decisions between 1952 and 1974, Arnold (1979, pp. 108, 113) found "strong support for the hypothesis that military committee members were better able to protect their installations than were rank-and-file congressmen. . . . Installations without representation on the military committees are still more than twice as likely to be closed as the others, even with such alternative explanations as base size controlled." Lewis Dexter (1963, p. 311) provided corroborative evidence that, in the words of one congressman, the House Armed Services Committee "is a real estate committee." A staff member described as "perhaps the most experienced staff man on military matters on the Hill" reiterated the point, stating, "Our committee is a real estate committee. Don't forget that. If you study our committee, you are studying real estate transactions."[1]

[1]Quoted in Dexter (1963, p. 311). Dexter concluded (p. 312), "By that, he meant that

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While these empirical studies show distributive politics and rent seeking at the operational level, they pay little heed to the crucial role of institutional or legislative structure in determining the scope of effective parochialism. This paper will show that observed political behavior surrounding base closures is a strong function of the institutional structure under which such decisions are made. Statutory mechanisms for closing major bases have often encouraged and institutionalized parochialism in these decisions. Once embedded in the formal mechanisms of law and the informal habits of decision-makers, this parochialism becomes enormously difficult to erase. By examining the political forces underlying congressional changes in institutional mechanisms to close bases, this article seeks insight into the broader question of congressional parochialism in the national defense program. The latter part of the article evaluates recent reform efforts and potential policy measures for reducing the institutionalization of parochialism.

Changing Statutory Constraints, 1961–1988

Between 1961 and 1988, major upheavals occurred in the institutional mechanisms for handling major base closures and realignments. Cycles of closure announcements, handled administratively in ways anathema to Congress, gave rise to cycles of restrictive legislation curtailing DOD's flexibility to implement major military base closures or realignments.

Closing obsolete or inefficient bases became a major policy issue in 1961. Shortly after his inauguration, President Kennedy announced his intention to have Secretary of Defense Robert McNamara look into the matter, and McNamara followed through with a vengeance. During this early period, DOD was not encumbered by heavy statutory constraints on its base realignment decisions. The general pattern was that DOD would announce intended base closures, legislators in affected districts would protest vehemently in congressional hearings, and DOD would close the bases it wanted to close. Within this institutional environment, McNamara slated large numbers of installations for closure in the early 1960s: 73 in 1961; 33 in 1963; 63 in April 1964; and 95 on November 19, 1964.

From Congress's perspective, the November 1964 announcement was the final straw, coming as it did only two weeks after the presidential election. After an aborted attempt to create what would have amounted to a one-house veto over DOD base closure proposals,

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the location of installations and related transfer, purchase, and sale of properties is the main concern of the House Armed Services Committee" (italics omitted).

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Congress enacted compromise legislation (H.R. 8439) that mandated a 120-day delay between the defense secretary's providing Congress with detailed justification for base closures and DOD's implementing those proposals. H.R. 8439 also specified that closures could be proposed by the executive branch only between January 1 and April 30 of each year, thereby preventing the president from proposing closures during eight months of each year. Only President Lyndon Johnson's veto on August 21, 1965, prevented the measure from becoming statutory law.

Rather than attempt to override Johnson's veto, Congress quickly enacted a watered-down provision that merely established a 30-day delay in implementing closures. The bill required the secretary of defense to give a full justification to the armed services committees for proposed closures affecting bases with more than 250 military and civilian personnel, after which the 30-day waiting period commenced.[2] Signed into law on September 16, 1965,[3] the mild provisions of the new law did little to curtail DOD's base-realignment efforts. Announcements of additional closure packages continued to arouse congressional ire: 149 closures or realignments proposed on December 8, 1965; 39 announced on January 19, 1967; then after an election-year hiatus, 40 on April 24, 1969; 280 on October 29, 1969; and 341 on March 6, 1970.

Congressional resistance solidified following DOD closure packages announced in 1973 and 1976 as part of a general reduction in forces due to termination of the Vietnam War. When Defense Secretary Elliot Richardson announced 274 separate realignment or closure actions on April 17, 1973, Congress was furious. Several key committees held extensive hearings, and individual legislators advocated statutory solutions (U.S. House of Representatives 1973; U.S. Senate 1973a, 1973b). The time was ripe for congressional action when DOD announced 147 additional bases as candidates for closure or realignment in 1976.

The legislation that Congress enacted later that year did not represent a mere gradual swing of the pendulum: It was a thunderous crash, shifting significant political power from the executive to the legislative branch of government. The first measure to win congressional approval, section 612 of H.R. 12384, imposed in essence a

[2]The 250-employee threshold was significant: Of 127 military installations in the United States and Puerto Rico affected by the base closure announcement of December 8, 1965, only 16 came under this statute's provisions.

[3]Military Construction Authorization Act, 1966, Act of September 16, 1965, Public Law no. 89–188, section 611, 79 Stat. 793 at 818.

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mandatory one-year delay before DOD could implement any base closure or major realignment. President Gerald Ford promptly vetoed the bill, citing section 612 as the objectionable provision (Ford 1976a, p. 1113). An attempt to override Ford's veto passed in the House but failed in the Senate, with 51 senators favoring the override (*Congressional Record*, 22 July 1976, pp. 23373, 23433). With such strong sentiment for the legislation, Congress took less than three months to pass an alternative version of the bill.

Nothing of substance was changed in the relevant provision of the new bill, H.R. 14846. While on paper the one-year mandatory delay was shortened to 60 days, the change was meaningless because mandated National Environmental Policy Act (NEPA) procedures would take at least a year anyway. Congress also held fast in its insistence that DOD provide incredibly detailed justification of proposed closures or realignments. Congress first required notification that a base was a "candidate" for action, then mandated compliance with NEPA, and last demanded a "detailed justification" of any final decision reached by the secretary of defense, including "the estimated fiscal, local economic, budgetary, environmental, strategic, and operational consequences of the proposed closure or reduction."

President Ford (1976b, p. 1422) signed this bill into law on September 30, 1976,[4] calling it a "substantial compromise on behalf of the Congress." The statute, codified as 10 U.S.C. section 2687, was the prototype of legislation that throttled all DOD attempts to close or realign major bases between 1977 and 1988. Made permanent in 1977,[5] the legislation was, as a DOD spokesman later described it, "the functional equivalent of giving Congress a veto" over base closure and realignment proposals.[6]

DOD nonetheless attempted to implement base closures under the new institutional arrangement. Defense Secretary Harold Brown released a list of 85 proposed closures and realignments on April 26, 1978, followed by proposals for 157 realignments on March 29, 1979. Congress had a field day contesting these proposals as well as fighting realignments first announced in 1976, which were retroactively covered by the 1977 legislation.[7] Congress now had a profusion of tools

[4]Military Construction Authorization Act, 1977, Act of September 30, 1976 [H.R. 14846], Public Law no. 94–431, section 612, 90 Stat. 1349 at 1366.

[5]Military Construction Authorization Act, 1978, Act of August 1, 1977, Public Law no. 95–82, section 612, 91 Stat. 358 at 379.

[6]U.S. Senate 1985, p. 11, testimony of Dr. Lawrence Korb.

[7]See U.S. Senate 1978, 1979a, 1979b; U.S. House of Representatives 1979.

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with which to undercut proposed closures: NEPA court challenges, congressional hearings on the candidate bases and on the detailed justifications DOD submitted, congressional demands for environmental studies during the authorization and appropriation process even when not otherwise required by law, denial of design funds for base consolidation, disapproval of construction funds to effect closures or realignments, imposition of requirements for alternate-use studies or one-year delays before implementation, and "remedial" legislation to block entirely DOD's decision to close or realign a military base.

These tools were used with zeal: As noted above, not one major closure or realignment was allowed between 1977 and 1988. DOD gave up proposing realignments, submitting no new closure packages between 1979 and 1985. Thus DOD spokesman Korb testified in 1985 that "With major bases now, it is almost impossible to close them, based upon my experience over the last 4 years" (U.S. House of Representatives 1985, p. 16).

It was one thing to reduce DOD's closure of major military bases, but quite another to stop it cold. In the face of obvious inefficiencies and waste sustained under prevailing institutional arrangements, political pressure mounted for "reform." That effort culminated on November 8, 1985, when a couple of modest changes to the 1976 legislation were signed into law.[8] First, recognizing that the old two-step procedure of declaring a base a "candidate" for realignment and much later rendering a "final decision" invited resistance to base realignment efforts, Congress compressed the procedure into a single-step approach. Thenceforth DOD would have to announce only its final decision to close or realign a base. However, the 1985 statute also mandated that DOD submit its base closure decisions in conjunction with its annual request for authorization of appropriations, in that regard making it easier, not harder, for Congress to block DOD's closures.[9]

One important question is, what made it politically feasible to implement these changes in 1985 and not at other times? Several factors appear to have been conducive to this outcome. As we will see below, Congress recognized that the 1977 law made it politically

[8]Department of Defense Authorization Act, 1986, Act of November 8, 1985 [S. 1160], Public Law no. 99–145, section 1202, 99 Stat. 583 at 716.

[9]Interestingly, President Reagan raised no constitutional objections to the bill, despite the similarities between it and the one President Johnson had vetoed in 1965 because it required base closure proposals to be submitted only between January and April.

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impossible not to resist base closures, a role some legislators viewed with increasing discomfiture. The Reagan administration was strongly pro-defense, as was the mood of the country, suggesting greater tolerance of DOD autonomy. The defense budget in the early 1980s was growing in real terms beyond anything ever before experienced in peacetime, which reduced the likelihood of extensive closures not offset by additional spending elsewhere (Stubbing 1986, pp. 13–14, 29–30). No major closures had occurred for over seven years, making the reality of their economic impact less tangible to voters. Moreover, the federal budget deficit loomed larger than at any previous time in U.S. history, increasing the political attractiveness of savings wherever they might be found. The confluence of these circumstances created a political environment more supportive of base closure policy reform than at any time in more than a decade.

In practice, however, the 1985 reforms proved totally ineffective. DOD first tried to use the new statutory mechanism in its closure requests for FY 1988. Each service offered one base for possible closure or realignment. Action on the Army's candidate—the Army Materials Technology Laboratory at Watertown, Massachusetts—was stopped cold after the Army withdrew its request, citing data inaccuracies. However, a DOD official stated in a telephone interview that the real reason for the withdrawal was political pressure exerted on the Army by key legislators from Massachusetts. Perhaps most alarming was congressional response to the Air Force's candidate, Mather Air Force Base (AFB) in California. When DOD identified Mather, Congress immediately enacted defense bill language to prevent expenditures even to *study* closure of Mather.

Hence, despite DOD's efforts, the 1985 statutory changes brought forth no major closures or realignments. NEPA procedures, as well as Congress's enhanced ability under the 1985 provisions to embed blocking provisions in mammoth, almost veto-proof, omnibus military construction authorization acts, sustained the institutional invitation to congressional resistance. Equally important, the 1985 provisions still required DOD to ask Congress to fund specific construction projects needed for base closures or consolidations.

To remedy the situation, Representative Dick Armey (Tex.), Senator William Roth (Del.), and others sponsored bills in 1987 and 1988 to empower the defense secretary to expedite implementation of military base changes. In October 1988, after more than two years of political maneuvering, Congress approved a modified version of Armey's proposal, which the president subsequently signed into

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law.[10] Its centerpiece is a newly established Commission on Base Realignment and Closure.[11]

The legislation required that by December 31, 1988, the Commission on Base Realignment and Closure transmit to the defense secretary and Congress its conclusions and recommendations regarding which U.S. military bases should be closed or realigned. Contingent on his approval of all the commission's recommendations by January 16, 1989, the defense secretary was empowered to implement the recommended changes without regard to both 10 U.S.C. section 2687 (the 1977 rules) and statutory restrictions on base closure or realignment expenditures included in appropriation or authorization acts. The new law also specifically provided a "DOD Base Closure Account" designed to reduce the appropriations barrier to implementing base closures. Receipts from disposal of surplus real property and facilities at military bases closed or realigned under the act are to be placed in the account, making these funds available to enhance facilities that accommodate relocated missions without the necessity for specific congressional appropriations.

Earlier versions of the bill elaborately specified the composition of the commission, reflecting congressional fears that particular partisan views would dominate. Much political horse trading surrounded the statutory language that actually emerged. The Senate came to accept appointment of the commission's members by the defense secretary in conjunction with preappointment of most Commission members and with insertion of another provision that made the Commission's recommendations an "all-or-nothing" proposition from the secretary's perspective.[12] To assuage historically well-grounded fears that base closures might be used to whip recalcitrant

[10]Defense Authorization Amendments and Base Closure and Realignment Act, Act of October 24, 1988, Public Law no. 100–526, Title II, 102 Stat. 2623.

[11]Although the 1988 law gave the Commission on Base Realignment and Closure its formal authority, Defense Secretary Frank Carlucci established the commission and appointed its first nine members earlier in the year under a special "charter" agreement signed May 3, 1988. The commission held its first hearings on June 8, 1988—a novel political relationship between bureaucratic cart and statutory horse. One rationale for the procedure was to reassure members of Congress of the commissioners' integrity, expertise, and nonpartisan outlook before Congress faced a vote on the bill. The final bill increased the commission's membership from 9 to 12, a compromise between those wanting to broaden its geographic representation to 15 members—a number DOD believed unworkable given the statutory time constraints—and those desiring to retain only the original 9 members.

[12]See footnote 11 for discussion of the preappointment strategy used to reassure Congress of the commission's nonpartisan nature.

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members of Congress into shape,[13] the bill provided that the secretary of defense had to accept all of the Commission's realignment and closure recommendations or none: The secretary was not allowed to pick and choose. Congress explicitly reserved its right, via expedited joint resolution, to disapprove the commission's plan within a period of 45 session days commencing March 1, 1989, but it also contemplated an up-or-down vote on the entire package.

As of this writing, the commission has made its recommendations, the secretary of defense has approved them, and the 45-day clock has expired. There were some local outcries, and congressional hearings allowed affected members their predictable fulminations. Joint resolutions of disapproval were introduced in both houses. Nonetheless, for political reasons explained more fully below, Congress failed to enact a joint resolution of disapproval, despite the fact that the commission's plan targets 86 bases for complete closure.[14]

Again one can ask, why now? Despite strong efforts by opponents to scuttle the bill, Armey was able to overcome most resistance by hard work, compromise, and a systematic media campaign. His bold, last-minute move to substitute the original language of the bill for the amendment-gutted shell on the House floor proved strategically decisive.[15] Politically, many viewed 1988 as a window of opportunity for such contentious issues, allowing the political heat to be directed toward the outgoing Reagan administration. Moreover, as described later, the statutory language that emerged from the House-Senate conference incorporated key changes to Armey's original bill that—from Congress's perspective—left the door to parochial base closure opposition comfortably ajar.[16]

The power of the new law's approach lies in its attempt to put the entire package rather than individual bases on the margin in the political decisionmaking process—for Congress as well as for the

[13]See the third section of this paper, "Congressional Resistance: The Nonparochial Rationale." See also Armey (1988).

[14]The joint resolution of disapproval (H.J. Res. 165) failed in the House by a vote of 43 to 381. Therefore the Senate was not required to bring the issue to a vote, since passage by *both* chambers was prerequisite to rejecting the commission's plan. The commission's recommendations affect 145 installations and are predicted to imply a 20-year savings with a net present value of $5.6 billion (using a 10 percent discount rate and 3 percent annual inflation rate). The commission's report states that "Of this number, 86 are to be closed fully, five are to be closed in part, and 54 will experience a change, either an increase or a decrease, as units and activities are relocated" (U.S. Department of Defense, December 1988, p. 6).

[15]See *Congressional Record*, 12 July 1988, pp. H5429–H5448.

[16]Loopholes in the statute are discussed in the fifth section of this paper, "Commission on Base Realignment and Closure: A Viable Reform?"

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secretary of defense. It is an effort to prevent the process from unraveling in the parochialism and interbranch suspicion that historically have attended congressional and executive branch decisions on individual bases. The fifth section of this paper analyzes to what extent the statutory language accomplishes this goal and whether it provides a viable long-term solution to the base closure problem. In the following two sections, we will examine how conflicting motives—parochial and nonparochial—have stymied previous congressional attempts to close bases that DOD labeled as obsolete and inefficient.

Congressional Resistance: The Parochial Rationale

It is the perceived duty of every senator and representative to block military base closures in his or her state or district, within the bounds of existing law. Constituents demand it; reelection requires it. Throughout U.S. history, particularly once the 1977 legislation was in place, legislators have used all manner of openly parochial maneuvers to keep "their" bases open. There is both a cynical and a sincere side to this resistance. Even if they abhor waste associated with inefficient bases, members of Congress often feel they owe it to their constituents to defend home district military bases as part of a general obligation to represent local interests. During hearings in 1973, for example, Representative Jerome R. Waldie (Calif.) asked with apparent sincerity, "How can a member of Congress from Rhode Island give up his advocacy of employment for his constituents, no matter what the source of that employment is, when they are out of work? . . . Does he say, well, that is okay, because it was a mistake to have operated Rhode Island as a defense installation over the years . . . ?" (U.S. House of Representatives 1973, pp. 7–8). Given DOD incentives and behavior described in the following section, it is difficult to dismiss such pleas as purely self-interested maneuvering for reelection.

One can find enough self-interested maneuvering for reelection without scratching so hard. It was hardly subtle when Senator John Glenn (Ohio) testified that "I am here today also on a very parochial basis, because I feel that the State of Ohio is being asked to bear a disproportionately large share of the Defense Department's cutbacks" (U.S. House of Representatives 1979, p. 109). Nor is there reason to ignore DOD's assessment of congressional resistance to base closures during the late 1970s and early 1980s. DOD's Lawrence Korb stated in 1985 that during the previous 10 years, of 601 major bases in the continental United States, 24 had been studied as primary candidates for closure, 8 of which were closed. He reported

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that "Of the remaining 16, most were deterred from closure as a result of Congressional action or the threat thereof. . . . It is political pressure, at times subtle and indirect, that usually precipitates a Departmental decision not to pursue an announced closure plan." Perhaps "undocumentable" would be a better label for such political pressure. Dr. Korb stated that "Lots of times as soon as people overhear we will even do the minor things, the phone is picked up and it is if you want my vote on this, don't do that. . . . I can tell you that on at least 10 occasions, that has happened to me" (U.S. House of Representatives 1985, pp. 53–54).

The resistance that *can* be documented is impressive. Congress has not hesitated to write specific measures into military construction authorization and appropriation statutes prohibiting base closures desired by DOD. For example, in 1971 Congress ordered that "Notwithstanding any other provision of law, none of the lands constituting Camp Pendleton, California, may be sold, leased, transferred, or otherwise disposed of by the Department of Defense unless hereafter authorized by law."[17] In 1986 Congress ordered that the correctional facilities at Fort Riley, Kansas, cannot be "closed, transferred, or relocated" unless the secretary of defense notifies Congress and a 180-day period elapses after Congress receives that notice.[18]

Congress's resistance to closing the Naval Academy's dairy station provides a particularly intriguing glimpse at parochialism. Although this Maryland dairy was established in 1911 "to provide the midshipmen with a source of pure milk following an outbreak of typhoid fever attributed to the unprocessed milk purchased for the midshipmen's mess," by the mid-1960s commercial dairies could satisfy the Navy's needs for pure milk products at lower cost. Based on a General Accounting Office (GAO) report showing potential savings of $83,803 per year if this facility were closed, the Navy in 1965 initiated plans to phase out the dairy farm. In response Congress enacted legislation in 1967 that specifically prohibited the Navy from doing so.[19]

What is unusual is that a representative from Maryland *opposed* preserving the dairy farm. During House debate of the bill, Representative Charles McC. Mathias, Jr. stated that while he had "a high regard for cows, whether they are found at the Naval Academy dairy farm or elsewhere," he "made it a matter of high principle to treat

[17]Military Construction Authorization Act, 1972, Act of October 27, 1971 [H.R. 9844], Public Law no. 92–146, section 709, 85 Stat. 394 at 414.

[18]National Defense Authorization Act for Fiscal Year 1987, Act of November 14, 1986, Public Law no. 99–661, section 1362, 100 Stat. 3816 at 4001.

[19]Military Construction Authorization Act, 1968, Act of October 21, 1967, Public Law no. 90–110, section 810, 81 Stat. 279.

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all cows with a fine degree of impartiality." He strongly dissented from "the proposition that 600 cows at Gambrills, Md., should be beatified by this bill and be hereafter considered as sacred cows." Mathias stated that the bill "would exempt these 600 sacred cows from the laws of economics, and . . . from the disciplines of the free enterprise system." A holdout from the parochial imperative? The Maryland representative in fact wanted the Navy to be able to close the dairy farm because the federal land was extremely valuable, and he hoped that more federal jobs would be provided on that turf if it were freed up for another governmental use.[20]

Parochial objectives have been achieved in ways other than outright congressional prohibition of base closure, however. For example, closure of Rickenbacker AFB in Columbus, Ohio, was delayed six years because of local court challenges during the NEPA process. Moreover, in effecting consolidation of basic helicopter training at Fort Rucker, DOD had to prepare five different environmental impact statements. Reacting to the parochial motives underlying such results, one representative commented that "There ought to be some point where there is a cutoff . . . so that we in the Congress can continue and a small group can't continually thwart a decision, and I think one impact statement ought to be enough" (U.S. House of Representatives 1985, pp. 4, 21).

Particularly noteworthy examples of parochially motivated congressional resistance surround DOD's attempts to close Loring AFB in Limestone, Maine, and Fort Dix in New Jersey. Of these two installations, Assistant Defense Secretary Korb stated: "There is no secret that some bases were not closed in the 1970's because of politics. I refer specifically to Fort Dix and Loring Air Force Base" (U.S. House of Representatives 1985, p. 3).

Loring AFB first appeared in a major realignment package on March 11, 1976, when DOD proposed that base as a candidate for an 83 percent reduction intended to reduce Loring from a main operating base to a forward operating base. The Maine delegation led by Senator Edmund S. Muskie rose to the occasion, becoming prime movers in initiating the restrictive base closure legislation enacted in 1976. Hearings were held in Limestone, and a parade of local residents, bolstered by the Save Loring Committee, told sad tales about how

[20]*Congressional Record*, 1 August 1967, pp. 20798–20799. The "sacred cows" remark of Representative Mathias appears on p. 20799. As previously noted, the "parochial imperative" phrase is from Fitzgerald and Lipson (1984, p. xviii). Fitzgerald and Lipson define the "parochial imperative" as "an excessive preoccupation with the local impact of spending decisions at the expense of the national interest," which they regard as a "congressional compulsion."

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their own businesses and Maine's economy would suffer if Loring were cut back (U.S. Senate 1976b). When DOD made its decision final in 1979 to reduce Loring AFB, the Maine delegation participated vehemently in realignment hearings, where Senator Muskie averred that reducing Loring was "unsound, inconsistent with our national interests, and an economic injustice to the people of northern Maine" (U.S. Senate 1979b, p. 113). Undeterred by GAO's independent finding that "The reduction of Loring appears economically justified,"[21] Maine delegates threatened to enact legislation specifically prohibiting the realignment unless DOD relented (U.S. House of Representatives 1985, p. 22).

The ploy worked. The Maine delegation used the reprieve to make Loring impregnable for the foreseeable future. In the early 1980s they engineered congressional approval of huge expenditures on Loring's facilities—against DOD's wishes. By 1985 DOD's Korb had thrown in the towel, stating that "because of the expenditure of new construction money that was basically *jammed down our throats* by the Congress, it no longer makes any sense to close that installation." It proved to be a long-term victory for parochialism: Loring AFB was not targeted for closure in the Commission's 1988 report. Korb pointed out that in the case of Loring, "We are not just talking about saving money. . . . We actually have endangered national security because you have planes that are in an area where they can be considered to be very close to being shot by submarine-launched cruise missiles" (U.S. House of Representatives 1985, pp. 8, 60).

Fort Dix, New Jersey, also proved politically difficult for DOD to dispatch. The Army first examined Fort Dix for possible realignment in 1971 and 1972 when it decided that it needed only one infantry basic training facility in the region, not two. Consequently in its 1973 realignment package, DOD announced studies of Fort Dix and Fort Jackson, South Carolina, to evaluate which to discontinue. This process dragged on until March 29, 1979, when DOD announced its "final" decision to transfer Army training functions from Fort Dix to four other bases including Fort Jackson.

The New Jersey delegation screamed. They vented their spleens at four separate hearings. They demanded a GAO report. To their dismay, the GAO report concluded that "annual savings should be about $15.8 million and the net one-time cost should be about $72.5 million," interpreted to imply a "payback" period of 4.6 years or

[21]U.S. General Accounting Office 1979a, p.1.

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less—within DOD's requirements for a worthwhile realignment project.[22]

The New Jersey delegation fought on. They managed to insert in the House-Senate conference report on the military construction bill for FY 1980 a mandate that Fort Dix could not be realigned or closed unless impact statements were created that emphasized the socio-economic factors in the affected regions. In the early 1980s they fought for huge new expenditures at Fort Dix not requested by the Army.[23]

By 1985 Fort Dix was still in business. For its part DOD was down but not out. As part of the "illustrative" list of 22 bases that DOD said might be evaluated for realignment or closure if the 1985 reform initiative were successful, DOD listed Fort Dix. Nonetheless, by 1988—17 years after the initial investigation of the closure of Fort Dix—parochial pressure still kept it alive. The defense secretary's commission recommended in 1988 that Fort Dix be reduced to semi-active status and that its entry-level training functions be relocated.

Congressional Resistance: The Nonparochial Rationale

Congress is not the only body whose members often allow politics rather than the national weal to influence their actions. As one representative put it, "The history of decisions made exclusively within the executive branch of the Government is one too littered with arbitrariness, parochialism, and caprice." The belief that DOD has played politics with base closures runs deep in Congress. Representative Patricia Schroeder (Colo.), chairwoman of the Task Force on Grace Commission recommendations for the Committee on Armed Services, commented that "The lists which come out of the Pentagon seem to be more based on politics than on military utility."[24]

This assessment partially underlies congressional restrictions on DOD's flexibility to implement closures and realignments. During

[22]U.S. General Accounting Office 1979b, p. 2. Hearings were held in 1979 by the House Appropriations Committee's Subcommittee on Military Construction, by the Senate Armed Services Committee's Subcommittee on Military Construction and Stockpiles, and by the Senate Appropriations Committee's Subcommittee on Military Construction. For a critique of the payback period computation, see footnotes 35–36 and accompanying text.

[23]See, for example, U.S. House of Representatives 1981, p. 23. The $18.6 million barracks modernization at Fort Dix was not requested by the Army.

[24]*Congressional Record,* 22 July 1976, p. 23431, remarks of Representative Dominick V. Daniels (N.J.); U.S. House of Representatives, Committee on Armed Services, *House Report No. 99-81,* 99th Cong., 1st sess., 10 May 1985, p. 452, views of Representative Patricia Schroeder (Colo.).

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floor debate on the 1985 amendments, numerous senators and representatives spoke of the historical tendency of DOD to play "hardball" with base closures. Senator Dale Bumpers (Ark.) reminded his colleagues that "the reason the [1977 base closure] law is as it is, is to keep Secretaries of Defense and Presidents from punishing individual Members who happen to disagree with them." Senator Carl Levin (Mich.) concurred that "these protections against untrammeled executive power to close bases came because Members of this Senate and this Congress felt that the power to close bases had been abused and had been used as a club over Members of Congress" (*Congressional Record,* 23 May 1985, pp. S6987–S6988).

In particular, members of Congress express much concern about selective use of base closures to secure congressional acquiescence on the defense budget. As Senator Arlen Specter (Pa.) put it, it is "not a matter of mere coincidence that, at the time the Department of Defense issues come before the country and at the time we are considering the budget, there are a series of releases from the Department of Defense about the prospects for reduction in forces, layoffs, and base closings" (*Congressional Record,* 23 May 1985, p. S6986). During May 1985 the *Washington Times* ran a story by Ralph S. Hallow entitled "Back the Budget or Lose Bases, Weinberger Warns Republicans." Although some doubted the story, the fear was real. In Senate debates on the reform proposals, Senator Bumpers remarked that "President Reagan is not a vengeful man. Secretary Weinberger is not a vengeful man. Neither of them would close an air base just to shape up a Senator's conduct. But they are not going to be around forever, and you do not know who the next President might be."[25]

Congress has other complaints as well, many of which pertain to information cost manipulation (Twight 1988). Senators and representatives cite instances in which they have been lied to by DOD, have had information withheld, and have not been notified of impending DOD actions. Take the case of Representative Peter Frelinghuysen, Jr. (N.J.). In McNamara's March 1961 round of base closings, Raritan Arsenal in Pennsylvania was designated to be closed. Yet in early January 1961 in response to Frelinghuysen's inquiry, Brigadier General H. A. Gerhardt wrote to Frelinghuysen, "As to the immediate future of Raritan, there are at present no Department of the Army plans to discontinue the arsenal." During hearings on these closures, as information emerged that documents suggesting closure were produced much earlier, Frelinghuysen asked the Army representa-

[25]*Congressional Record,* 23 May 1985, p. S6979, remarks of Senator Bumpers, and p. S6983, the *Washington Times* story.

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tive, "I wonder, General, how you could help me justify that statement with the statement you just made, that the survey of Raritan Arsenal had been completed in July 1960, and that your firm determination to close this arsenal entirely was made on the 14th of February? How in the beginning of January could any representative of the Army make a flat statement that there are at present no Department of the Army plans to discontinue the arsenal?" Frelinghuysen went on to label Gerhardt's statement "obviously untrue and I can think of no more charitable way to describe it" (U.S. House of Representatives 1961, pp. 158–159).

Congressional concern about DOD's withholding information and not giving Congress adequate notice of impending base closures suffuses the hearings and congressional debates. For example, with regard to the closure announcement of November 19, 1964, Representative William J. Randall (Mo.) stated that a "complete factual blackout" occurred, adding that "Information was first given to the press, then sometime afterward Members of Congress were notified" (*Congressional Record,* 10 June 1965, pp. 13244–45).

Regarding the New England base closures of April 1973, withholding of information extended well beyond the date the closures were announced. Representative Margaret M. Heckler (Mass.) was concerned not only about bases in her state, but also about the Quonset Point Naval Air Station and the Naval Complex in Newport, Rhode Island, both of which had major employment effects in her district. DOD's official reports to Congress on each base closure consisted of a three-page report that stated DOD's conclusions without providing justification for the savings claimed. When Heckler tried to obtain the "Case Study and Justification Folder" for each base, the Navy refused, claiming they were "internal documents." Asked by Heckler for statutory justification for withholding these documents from Congress, the Navy replied that "there is no statutory authority but a policy guideline." Even more disturbing was the Air Force's response that the case studies had been "partially destroyed" and that what remained were "internal documents" that would not be released to the congresswoman. By June 21, DOD and the services still had not turned over justification folders to the Senate Armed Services Committee, creating what Heckler adjudged "the issue of secrecy, the potential for military coverup" (U.S. Senate, 1973a, p. 96; U.S. House of Representatives, 1973, pp. 78–79). Only later were the documents finally given to Congress.

Congess also has expressed concern over whether the DOD's expected savings from closures or realignments are realistic. One major dispute involved DOD's failure to state nonmilitary govern-

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mental costs that would be incurred as a result of a closure. As early as 1965, senators complained that DOD's savings were often illusory, stating that "The savings announced by the Secretary of Defense reflect only military savings. They in no way reflect governmental savings." Retirement costs, unemployment benefits, and other nonmilitary costs attributable to the realignment were not tallied.[26] One result of such complaints was President Carter's issuance on March 27, 1978, of Executive Order 12049, which required DOD to evaluate all federal costs associated with base realignments, not just military costs.

More fundamental questions can be asked about DOD's assessment of marginal costs and benefits associated with closure or realignment. The federal budget in general and military budgets in particular use cash accounting, implying that treatment of capital assets is seriously misguided from a present-value perspective. It is as if the concepts of investment, capital assets, and opportunity cost were foreign to the lexicon of government budgeters.[27] GAO's independent analyses of proposed closures often are not reported in terms of net present value. Absent such crucial considerations, it is no wonder that members of Congress have labeled existing procedures as "woefully inadequate," claiming that "in far too many cases, such actions now end up costing American taxpayers more than they allegedly 'saved' " (*Congressional Record*, 22 July 1976, p. 23429).

Finally, there are the closure decisions that appear to reflect either ineptitude or political gamesmanship. Consider the case of Richards-Gebaur AFB, Missouri, located near the Kansas border and of immense parochial interest to politicians on both sides of the line. Richards-Gebaur became home for the Air Force Communication Service (AFCS) in 1970 when that facility was moved to Richards-Gebaur from nearby Scott AFB in Illinois, only 500 miles away. The move was defended at the time as a cost-effective realignment in that the

[26]*Congressional Record*, 28 June 1965, p. 15006, remarks of Senator Thomas J. McIntyre (N.H.); see also *Congressional Record*, 22 July 1976, p. 23430, remarks of Representative Silvio O. Conte (Mass.).

[27]Economists can only cringe listening to the following exchange between Representative Richard S. Schweiker (Pa.) and Paul Ignatius, then Assistant Secretary of Defense, that took place in the 1966 hearings on base closures:

"Mr. Schweiker. Are we figuring here at all in this savings structure any figures relating to the capital assets that we lose by shutting down the base?

Mr. Ignatius. No, sir, we do not, because the Government does not in its accounting system amortize investment costs. We pay for the costs at the time the property is acquired, and we do not amortize or take account of any residual costs. By the same token . . . in our reported savings we did not take credit for what we might gain through selling these facilities" [U.S. House of Representatives 1966, p. 6414].

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AFCS would be consolidated in a modern facility that more closely matched the requirements of the mission, enabling AFCS to function effectively as a force-wide communications system.[28]

The twist to the story came in 1974. A scant four years after moving AFCS from Scott to Richards-Gebaur, the Air Force decided to move it back to Scott, again citing "efficiency" as the primary rationale. Held up by NEPA challenges in 1975, the proposed move reappeared in the DOD realignment package issued in March 1976. Senator Thomas Eagleton (Mo.) commented that "If that move had been made 40 years ago, then one could say it was a long time ago and a different world," but, he asked, "How can a decision in 1970, and an efficient decision made then, be completely reversed and became an efficient decision going back the other way, 6 short years later?" (U.S. Senate 1976a, pp. 78–79).

Although Air Force Secretary Thomas Reed insisted that this was merely a "proposal" rather than a final decision, his protestations did little to soothe affected members of Congress. Representative Richard Bolling (Mo.) cited Speaker Sam Rayburn's advice to new members of Congress not to seek military bases in their districts: "His point was that the same kind of arbitrary decision that could bring a defense payroll into an area, could later take it away. Mr. Rayburn believed that people's lives shouldn't be jerked around that way" (U.S. Senate 1976a, pp. 75–77). The next section examines the role of existing institutions in determining the nature and extent of such political manipulation of base closures.

Institutionalizing Parochialism

Institutions shape behavior, defining marginal benefits and costs associated with political action. As was evident in 1976, pressures always exist to change institutional ground rules to facilitate, rather than constrain, rent-seeking behavior. The question is how to design institutions to reduce such institutionalization of parochialism.

The history of the base realignment struggle since 1961 confirms the paramount role of relevant institutional mechanisms. Before the 1976 changes, the institutional structure gave Congress room to be vocal in resisting DOD-requested base closures but for the most part

[28]Despite DOD's brief for the efficiency of the move, testimony later revealed that politics also played a role. Representative William Randall (Mo.) testified that in 1970 another House member procured appointments for him at the White House "all the way up to the Presidential level." He reminisced that "Everyone in the area worked together to accomplish the objective of reactivation of our base. . . . The Secretary of the Air Force also helped some, but it was the final approval of former President Nixon that led to the establishment of AFCS at Richards-Gebaur" (U.S. Senate 1976a, p. 66).

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enabled DOD to act on its judgments. The result? John Lynch (1970, p. 7) reports that between 1960 and 1969, of 954 realignment actions announced by DOD, only 2 were *not* implemented.

In 1976 the pendulum swung the other way. The new institutional mechanisms so lowered the marginal cost of resisting major base closures and realignments that it became politically untenable for Congress not to block realignments. As Senator J. Strom Thurmond (S.C.) put it, the legislative process established in 1976 "invited interference from the Congress," providing "skillful obstructionists with every conceivable opportunity to delay or totally prevent the closing of nonessential bases" (U.S. Senate 1985, p. 1; *Congressional Record*, 23 May 1985, p. S6987). Reflecting on that legislation, Korb felt that the issue was "whether we want to sustain a system that basically compels an elected Representative or Senator to use the law to prevent what his constituents want prevented" (U.S. House of Representatives 1985, p. 12). In short, under the 1976 rules parochial desires were almost universally guaranteed implementation by the existing institutional mechanism.

In attempting to nudge the pendulum back in the other direction, the 1985 and 1988 reform efforts provide considerable insight into designing institutional mechanisms less vulnerable to political pressures both from Congress and from the executive branch. Collectively they show that, to lessen institutionalization of parochialism, the law should shape private marginal costs to deflect rather than nurture *substantive* parochial action, making marginal costs and benefits perceived by individuals more accurately reflect the opportunity costs involved. On the executive side, reform legislation must lower the marginal cost to administration officials and military personnel of implementing cost-effective realignments, while raising the marginal cost to those individuals of promoting politically motivated realignments. On the legislative side, base closure reform must raise the marginal cost to politicians of acting on the parochial imperative (or lower the marginal political cost of *not* acting on a purely parochial basis). Reform must make the "parochial" less "imperative" to the extent that such behavior is shaped by institutional rules.

It is not wholly fanciful to surmise that such institutional changes might win congressional approval. Despite widespread cynicism about politicians acting in the public interest, people such as Dick Armey continue to do so on this issue, and occasionally they prevail. Adoption of the 1988 base closure measure demonstrates that a modicum of remedial legislation is possible. Moreover, as discussed below, changes in statutory law that reduce substantive parochialism can be

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made politically attractive if designed to reduce politicians' costs of winning constituent approval.[29]

The key issue, of course, is how to do it. One technique is to leave ample room for politicians to demonstrate concern for constituents, while not allowing parochial concerns to be translated into action without a strong nonparochial rationale. Senator Phil Gramm (Tex.) was particularly sensitive to thus accommodating political needs of members of Congress:

> The beauty of this [1985] proposal is that, if you have a military base in your district . . . under this proposal, I have 60 days. So, I come up here and I say "God have mercy. Don't close this base in Texas. We can get attacked from the south. The Russians are going to go after our leadership and you know they are going to attack Texas. We need this base." Then I can go out and lie down in the street and the bulldozers are coming and I have a trusty aide there just as it gets there to drag me out of the way. All the people in Muleshoe, or wherever this base is, will say, "You know, Phil Gramm got whipped, but it was like the Alamo. He was with us until the last second." The bottom line is the public interest will have been preserved [U.S. Senate 1985, p. 17].

As Gramm's remarks make clear, the challenge from an institutional-design perspective is to take what Mayhew (1974, pp. 52–73) calls a "particularized benefit" out of the realm of credible "credit-claiming" and into the realm of "position-taking." To any legislator who views parochial defense of an obsolete local military base as a necessary evil serving the larger goal of reelection, such a change would reduce the personal costs of winning constituent approval.

The burden of proof concerning base closures also is crucial to institutional vulnerability to parochialism. Under the 1976 rules, this burden was predominantly on those who wanted to close a base, creating a system Senator Gramm described as "totally rigged against closing bases" (*Congressional Record*, 23 May 1985, p. S6981). With his 1985 reform proposals, Gramm rightly sought to shift that burden.[30]

[29]In addition, some legislators might be swayed by a desire to escape a client relationship with DOD. See testimony of Professor Seymour Melman (U.S. House of Representatives 1973, p. 10).

[30]Legislators were amply forewarned of the institutional consequences of the two-step process under the 1976 rules. Representative Lawrence Hogan (Md.) warned in 1973 that if candidates for base closure are made known in advance on a "suspect list," the affected congressional delegations "would bring unbearable pressure to bear to try to reverse that suspect list to eliminate their own constituencies from that list. . . . It is a part of the political system of our democracy" (U.S. House of Representatives 1973, p. 32). And in 1976, speaking against the legislation initially vetoed by President Ford, Senator George McGovern (S.D.) said, "All we are going to accomplish if we override this veto is to provide 1 year for the Chamber of Commerce and the various groups in

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Also critical to insulating institutions from parochialism is the mechanism for appropriating funds to effectuate base closures or realignments. In the past, to implement a closure or realignment—after complying with all other congressional requirements—DOD had to ask Congress for funds to curtail activities at a base being reduced and to upgrade facilities at a base being expanded. That is, appropriations targeted at named bases were prerequisite to effectuating closures and realignments. Once a targeted base was known, all the familiar logrolling incentives came into play, and the parochial imperative naturally dominated the outcome at the institutional level.

Consider an alternative approach. Knowing that realignments may be necessary in the ensuing fiscal year, Congress might appropriate money to implement such realignments *without knowledge* of specific bases to be affected. Using Buchanan and Tullock's Rawlsian idea that uncertainty regarding one's future state enables one to make political choices not exclusively driven by self-interest too narrowly defined, this procedure would require that legislators focus on the desirable extent of realignments without becoming enmeshed in parochial devotion to a particular constituency's narrow economic concerns. In a sense the procedure would impose a "constitutional" frame of mind on a very particular decision faced by Congress (Buchanan and Tullock 1962, pp. 77–80). To the degree that this "constitutional" mindset can be incorporated into the day-to-day institutions of government, we might curtail the dominance of the parochial imperative. Regarding appropriation of funds for base closures, Senator Gramm put it succinctly: "You have to get people to vote on the principle and not the practice."[31] (U.S. Senate 1985, p. 30). The extent to which the "DOD Base Closure Account" created by the 1988 legislation may or may not serve a similar purpose is discussed in the next section of this paper.

Moreover, to the extent that we dampen community resistance to cost-effective realignments, we further curtail the institutionalization of parochialism. By enhancing existing efforts to help communities convert from military to civilian employment when military facilities are closed or substantially reduced, one can lower the apparent mar-

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these affected communities to come here and lobby for special legislation to save these wasteful, surplus facilities that add nothing to the defense interests of the country"(*Congressional Record*, 22 July 1976, p. 23369).

[31]With respect to closures, this was exactly what Gramm tried to do with his 1985 reform proposals, which included a $1 billion annual fund to implement closures generally, not tied to named bases. This provision was stripped out of the reform legislation actually enacted by Congress. Certain members of Congress openly rejoiced that the base closure purse strings remained in parochial hands.

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ginal cost of the realignment to the targeted community; benefits from such realignment otherwise may seem largely external to that community.[32] (See Melman 1974, p. 250.)

The success of economic adjustment programs, which have existed since 1961, has shown communities that they can emerge from base closures as winners, not losers.[33] A comprehensive study (U.S. Department of Defense 1986, p. 1) of completed economic adjustment projects reported that between 1961 and 1986 "A total of 138,138 civilian jobs are now located on the former Defense facilities to replace the loss of 93,424 former DOD or contractor jobs."[34]

Richard Stubbing (1986, pp. 253–55) suggests additional techniques for softening resistance to realignments of major bases: Besides countering local communities' fear of the closure's negative economic consequences through governmental efforts to facilitate conversion, he would spread closures out geographically whenever possible to minimize any perception of unfairness. He also suggests mitigating resistance to closures from within the military by rewarding military leaders if they get Congress to endorse closures, perhaps giving them extra funds to upgrade retained facilities.

Finally, to gain public and congressional support for base realignments, it is imperative that DOD and the military services consistently use accounting procedures that more accurately reflect the marginal costs, marginal benefits, and net present value of alternative base-structure proposals. Astonishingly, even very recent official statements issued by DOD treat expenditures and savings occurring

[32]Although some might denounce conversion assistance as a localized subsidy aimed at solving a problem better handled by market adjustments, the political reality is that the benefits of efficient defense realignments are national in scope. A strong equity argument therefore suggests that its costs should likewise be borne more widely by the public in the form of short-term retraining assistance and the like. An even stronger argument grounded in practical politics is that without such conversion assistance, parochial interests may thwart the public's wider interest in efficient defense and economic productivity. In a sense conversion assistance provides a method of actual, as opposed to potential, compensation to those harmed, a mechanism designed to procure consent to cost-effective realignments. If a proposed move is indeed efficient, the gainers can compensate the losers and remain better off themselves.

[33]Between 1964 and 1969 economic conversion efforts were buttressed by a "job-guarantee" program that guaranteed permanent DOD employees, whose jobs were eliminated by a base closure, the offer of at least one DOD job elsewhere as well as assistance in finding private employment. Although discontinued in 1969, this program offered another institutional mechanism to reduce parochial pressure on Congress by reducing the perceived private marginal cost to constituents of such closures (see Lynch 1970, pp. 34–43).

[34]For additional statistics, see U.S. Senate (1985, pp. 6–7). See also U.S. House of Representatives (1985, pp. 25–49) and Duscha (1965, pp. 158–74).

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at different times over many years as if they all occurred today. Defying logic as well as fundamental principles of finance and economics, these statements treat a dollar today as equivalent to a dollar 10 or 20 years from now (see U.S. Department of Defense 1988, pp. 4–5). This discrepancy does not just involve nickels and dimes. On May 18, 1988, Defense Secretary Carlucci testified that, with a net one-time cost of $240 million to relocate a mission, and with annual recurring savings of $40 million attributable to efficiencies from relocation or consolidation of missions, the "payback period" would be six years. Nice, simple arithmetic: 240/40 = 6.

However, Carlucci (U.S. Department of Defense 1988, p. 5) also mentioned that "Savings don't begin to accrue until after the move occurs, normally in the fifth year." If the move is in the fifth year so that savings do not begin until the sixth year, $40 million per year for six years commencing six years from now (i.e., years 6 to 11 relative to today) would have a present value of only about $109.4 million, using 10 percent as the discount rate—a far cry from the $240 million assumed by the secretary of defense.[35] Viewed another way, the true payback period to compensate for $240 million in outlays today is slightly over 48 years, not the 6 years that the defense secretary asserted before Congress.[36]

Without this crucial analysis of present value, it is hard to envision the expected savings associated with recommended closures and realignments as anything other than moving the walnut shells around. Until DOD and Congress consistently use cost-accounting procedures appropriate to effective business decisionmaking (properly valuing capital assets and opportunity costs associated with different base configurations), military base realignment will remain the bastard child of parochialism. The extent to which the situation has been remedied by the 1988 legislation is evaluated in the following section.

Commission on Base Realignment and Closure: A Viable Reform?

If not overwhelmed by political exploitation of loopholes discussed below, important features of the recently enacted base closure

[35]These computations were made on the assumption that the $40 million in annual savings accrues on a monthly basis ($3,333,333.33 per month).

[36]This comparison takes at face value Carlucci's assumption that the "net one-time costs" of $240 million are incurred immediately. If some of those costs occur in the future, they too must be discounted to present value. If we supposed that the one-time costs for military construction and relocation were incurred gradually over the initial 5-year period (spreading these costs equally over 60 months), using Carlucci's cost figures (and a 10 percent discount rate) the payback period would still be just under 20 years rather than the 6 years he claimed.

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legislation[37] satisfy certain reform principles suggested above. With respect to closures recommended by the commission, the new law lowers the marginal political cost to legislators of not acting on the parochial imperative: The affected legislator can truthfully blame the commission. That is, the measure partially removes this particularized benefit from the realm of credit or blame for the legislator and puts responsibility for the outcome on the commission. It moves part way toward making legislators accountable for their *position* rather than the outcome. (See Mayhew 1974 on position-taking and credit-claiming.)

The new law also raises the marginal cost to legislators of acting on the parochial imperative by making certain statutory impediments inapplicable when the commission selects bases for closure or realignment. To the extent that Congress is forced to evaluate the commission's entire package rather than individual bases, the new law supports a less-parochial appraisal.

The 1988 statute potentially raises the marginal cost to executive branch officials of using closure recommendations for partisan political purposes both (a) by reducing the credibility of recommendations not endorsed by the commission, and (b) by preventing the defense secretary from *selectively* adopting the commission's recommendations. It simultaneously lowers the marginal cost to DOD officials of implementing cost-effective realignments by removing statutory obstacles to closing bases selected by the commission, by placing relevant executive decisionmaking authority in the hands of a lame-duck administration, and by providing a partially automatic funding mechanism through the DOD Base Closure Account.

The statute's explicit provision for DOD expenditures on economic adjustment assistance implies continued support for reducing the perceived marginal cost of realignments to adversely affected communities. In addition, facilitating net present value assessments, the new law requires DOD to report not only anticipated expenditures for and savings from each closure but also the time period in which such savings are expected to occur. Moreover, while not mandated to do so by this statute, the commission chose to make its calculations in present-value terms, setting what could (and should) be an influential precedent for future closure evaluations.

Nonetheless, significant loopholes remain. At every step in the legislative process, members of Congress strove to attach emasculat-

[37]Defense Authorization Amendments and Base Closure and Realignment Act, Act of 24 October 1988, Public Law no. 100-526, Title II, 102 Stat. 2623. See footnotes 10–13 and accompanying text for discussion of major features of this act.

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ing amendments to Armey's bill. To his credit, after four committees effectively recast the "reform" measure into a bill guaranteeing retention of obsolete bases, Armey managed to engineer elimination of the most egregious provisions. Thus Congress ultimately rejected committee attempts to require socioeconomic impact statements, retention of historical sites, certification that no retained overseas base is less valuable than a domestic base selected for closure,[38] on-site hearings to receive testimony from affected communities, active congressional approval of the closure list, and the like.

But Armey had to compromise, and those compromises threaten to undermine the law's original purpose. The major opening wedges for continued parochialism under the new law involve (a) provision of funds to implement base closures, (b) applicability of the Federal Property and Administrative Services Act and the Surplus Property Act, and (c) applicability of the National Environmental Policy Act of 1969.

We have seen that Congress's control of funds necessary to implement base closures historically has enabled parochially motivated politicians to block cost-effective changes in base structure. Unfortunately, that pattern is likely to continue. Despite DOD's new statutory power to deposit certain sale proceeds in the Base Closure Account, it is clear from the floor debates that many members of Congress intend to perpetuate "hands-on" funding for closure of named bases. For example, as a gesture of good faith that at least shifted transaction costs to those seeking future changes in the authorization, the Senate bill that went into conference (S. 2749) authorized appropriation of $300 million for *any* fiscal year after 1989.[39] In a disquieting move portending future practice under the 1988 law, the conference committee stripped that authorization from the bill, stating that "since the funding requirements for direct appropriations cannot be determined until the Commission has completed its work, the conferees agree to a provision that would require direct funding of the base closure account to be established each year during the

[38]However, Congress retained a provision requiring the defense secretary to study the overseas base structure for possible efficiencies attainable through closure or realignment and to report the study's results to the commission by October 15, 1988. Alan J. Dixon (Ill.), chairman of a 17-member Northeast-Midwest Senate Coalition, quickly impugned DOD's report that no overseas bases need be closed. His coalition by letter urged the Commission on Base Realignment and Closure to consider "regional inequities stemming from the location of existing military facilities." (Quoted in *Insight*, 21 November 1988, p. 29). The same article noted that the Pentagon had cited three installations in northern Illinois for possible closure.

[39]Actual appropriations, of course, remained an unresolved question.

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annual authorization and appropriations cycle based upon the Department's budget request."[40] Once again, we face the specter of Congress voting on funds to close named bases. To the extent that DOD must rely on such direct appropriations, the parochial result is likely to follow, and the 1988 law's central effort—to decouple closure funding decisions from logrolling in support of individual bases—could come to nought.

There are other reasons why the Base Closure Account may not fulfill its promise. The new law envisions three sources of funding for base closures: Base Closure Account receipts from DOD sale of surplus or excess properties and facilities, DOD transfers to the account from funds appropriated for other purposes (reprogramming), and monies specifically authorized and appropriated by Congress. Despite the aforementioned problems with direct appropriations, one thus might hope that other receipts and transfers would fortify the account. Yet additional obstacles intervene. For example, the law states that the defense secretary can make transfers reprogramming funds only "subject to approval in an appropriation Act" after providing relevant congressional committees with "written notice of, and justification for" the transfer. Thus the appropriations subcommittees again retain explicit statutory power to thwart the process. Moreover, the defense secretary's authority to sell property under the act extends only to "excess and surplus real property and facilities located at a military installation closed or realigned under this title." In other words, it is not a broad power to dispose of *other* surplus facilities to generate funds necessary to implement the recommended closures. Finally, as discussed below, procedural requirements under the Federal Property and Administrative Services Act further undercut the Defense Department's ability to transform property disposals into a major funding source obviating direct appropriations.

To facilitate DOD's disposal of excess property, the original reform proposals explicitly waived cumbersome procedural requirements of the Federal Property and Administrative Services Act, permitting sale proceeds to be deposited in the DOD Base Closure Account.[41] The enacted statutory language, by contrast, mandates application of the normal regulations governing disposal of excess property: It sim-

[40]*Congressional Record*, 11 October 1988, p. H9947. (Conference Report on S. 2749, Defense Authorization Amendments and Base Closure and Realignment Act, House Report 100–1071).

[41]See Thompson (1988, pp. 559–60) for a discussion of the cumbersome procedures required under Federal Property and Administrative Services Act regulations governing disposal of military property.

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ply orders the administrator of General Services to delegate his functions under relevant statutes to the defense secretary to carry out transactions allowable under the new base closure law. Although the statute for the first time allows DOD to benefit directly from certain sales of DOD-owned real property and facilities, protracted procedures under federal property-disposal regulations impair the ability of the Base Closure Account to function as an automatic funding mechanism.[42] Indeed, the hierarchy established by statute for such disposals makes it possible for some transfers of surplus property to be made without remuneration to DOD. With respect to property disposals, the 1988 legislation thus improves upon preexisting statutory law but falls short of fulfilling the promise of the original bills.

Experience under the 1977 law also attests to NEPA's potency in blocking closure of major military installations. Accordingly, earlier versions of the Armey and Roth reform proposals waived NEPA along with other statutory obstacles to base closures. However, the enacted statutory language only partially waives NEPA. While waived with respect to actions of the commission and the defense secretary in selecting sites for closure or realignment, NEPA requirements are mandated with respect to *implementation* under the act. Implementing closures recommended by the commission is prohibited until 1990 to allow the NEPA evaluation to occur. Still, NEPA's applicability to base closures has been narrowed significantly, and it is unlikely to prove as powerful an impediment as it has been outside the context of the 1988 act.[43]

Besides the vulnerabilities summarized above, other potential problems exist. For example, the scope and sustainability of a key provision—allowing commission-recommended closures to proceed despite certain statutory restrictions on expenditures—is debatable. Although the provision was originally intended to waive statutory restrictions on outlays for specific closures or realignments contained in *existing* authorization or appropriation acts, its applicability to similar future statutory restrictions is in doubt.[44] Not only would courts likely regard later measures as superseding this provision, but future restrictions on closure expenditures could explicitly modify

[42]Thompson (1988, pp. 557–58) reports the previous procedure with respect to land sales: "The military gain nothing from the sale of land; receipts from land sales go not to the military branch holding the asset but to the Land and Water Conservation Fund of the Treasury."

[43]For example, civil suits under NEPA against the commission or the defense secretary must be brought within 60 days of the occurrence of the challenged action.

[44]I am indebted to Brian Gunderson, congressional aide to Representative Armey, for his insights regarding this provision.

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the relevant waiver if that were Congress's desire. The fact that DOD must notify Congress of realignment-related construction projects costing more than the maximum amount for minor construction projects reinforces concerns about future congressional prohibition of particular outlays.

Finally, to achieve long-run success the process must become an ongoing one. One of the weakest aspects of the 1988 reform package is its transitory nature, which envisions a single commission plan to be implemented or rejected within a specified period. No matter how successful on a one-shot basis, the reform will do little long-term good unless established as a periodic institutional curative.

Beyond the new law's strengths and weaknesses, certain political aspects of its final enactment merit reflection. Contemporaneous congressional debates largely provided reruns of familar arguments detailed earlier in this paper. Of great interest, however, was the legislators' posture on the day of final passage by the House and Senate: Practically no one—friend or foe of the bill—even hinted at the avenues to continued parochialism codified in the language being enacted. Supporters congratulated one another on their victory and applauded anticipated efficiencies. Long-time, publicly committed opponents decried past Pentagon abuses, DOD's likely influence over a "rubber-stamp" commission, the short time allowed to determine the closure sites, the allegedly inadequate geographic representation on the commission, and the like. Yet hardly a soul mentioned the major loopholes documented above. The closest they came was Representative Armey's subdued acknowledgement that "In the coming years, it is almost certain that some members will attempt to reverse the waste reduction program which we are beginning today." He expressed "no doubt" that "some will try to abort the program and break the commitment which we have made" (*Congressional Record*, 12 October 1988, p. H10035).

Of course, many in Congress understood full well the unstated implications of the language being enacted. In earlier floor debate on language similar to that ultimately adopted, Representative Jon Kyl (Ariz.) stated that, without authorization of appropriations, the bill would "hold hostage the closing of these bases to the whims of the Armed Services Committee or the Appropriations Committee." Calling it the "fundamental flaw" remaining in the bill, Kyl stated that "because of the need to get the appropriation, it puts that back into the hands of our committee . . . and, therefore, instead of saying 'Are we going to close this group of bases or not?' The question is: 'How can we lobby each other so that we will appropriate x amount of money to close these bases, but no funds shall be appropriated for

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the purpose of closing Base A, Base B, and Base C?' " In the same debate Representative Les AuCoin (Ore.) called it "essential that there be little or no opportunity for congressional intervention once the bases to be closed have been identified" (*Congressional Record*, 12 July 1988, pp. H5440, H5437).

From the perspective of public choice and political science, congressional floor behavior on the day of final enactment presents no mystery. Creating good copy for their constituents and for the press, those who labored more than two years to enact genuine reform naturally sought to highlight their successes rather than their failures. Why not claim credit, when to do otherwise might erode personal political benefits and threaten alliances on which passage of the bill depended? Vocal opponents on record in strong opposition to the bill likewise sought to document for the public the purity of their positions, not wishing to undermine that posture by acknowledging the soft underbelly of the new law. The public display provided gains for legislators on both sides of the issue, supplying yet another example of legislators' augmentation of transaction costs facing the voting public (Twight 1988).

Thus we come to analyze the overwhelmingly large margin by which the 1988 Base Closure and Realignment Act was adopted: 370–31 in the House; 82–7 in the Senate. Should we interpret this as an outpouring of support for genuine reform, a fundamental change of heart toward parochialism in these matters? Economics suggests a more plausible explanation. When a "reform" measure is riddled with unpublicized loopholes, it becomes extraordinarily cheap politically for parochially minded legislators to vote in its favor. Existing models of the political process suggest that, from Congress's parochial perspective, such a result might be perceived as optimal—a continuation of the tangible benefits of parochialism coupled with credit for fighting it.

Conclusion

The evidence with respect to military base closures is overwhelmingly consistent with the hypothesis that the specific institutional mechanisms we adopt through statutory law shape the observed degree of parochialism in a policy area such as base closures or realignments. Institutional structure as embodied in statutory law thus increasingly needs to be brought to the foreground in economists' and political scientists' analyses of political behavior. The interesting questions surround the choice of institutional structures. Can we devise institutional incentives that will dissuade legislators

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from adopting statutes that facilitate parochialism without severely eroding the concept of a representative democracy? Existing models of political change suggest that, in revising institutional-level rules, parochial motives are likely to drive the outcome as surely as they do when a representative decides to fight to retain an inefficient local base. Rent seeking at the institutional level, coupled with the ubiquitous desire to claim credit for all things perceived to be good, suggests a veneer of reform, not its actuality.

Nonetheless, to the extent that we understand more fully the workings of the parochial imperative, it may be possible to constrain it. Whereas now we most often create institutions that provide a show of reform masking the actuality of parochialism, more thoughtfully devised institutional ground rules may allow legislators to make a political show of parochialism while acting on their nonparochial assessment of proper public policy.

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The Multifiber Arrangement and the Management of International Textile Trade

Thomas Grennes

What began in 1957 as a temporary restriction on imports of Japanese cotton textiles into the United States has evolved over 30 years into a complex market-sharing agreement involving all major trading countries and all categories of textile and apparel trade. The Multifiber Arrangement (MFA) is a major experiment in the management of international trade. However, the use of discriminatory quotas in the MFA is a serious violation of the principles of General Agreement on Tariffs and Trade (GATT) that have governed most trade since World War II. The quotas involve substituting political forces for economic forces in the determination of trade. The arrangement has imposed high costs on consumers in importing countries, and it has interfered with the United States' foreign policy goal of promoting economic development in low-income countries. The MFA has also been criticized by proponents of textile protection for failing to restrain import growth sufficiently. The time is right to reevaluate this experiment in managed trade and to determine whether to continue the market-sharing approach of the MFA or to return textile trade to compliance with the general rules of the GATT.

Description and Purpose of the Arrangement

The Multifiber Arrangement, an agreement among 42 exporting and importing countries, regulates trade in textiles and apparel. The stated objectives of the MFA are the expansion and liberalization of textile trade and the avoidance of disruption in import markets. Since import restriction is the most frequently used remedy for market disruption, there is an inherent conflict between the objectives. The

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resulting system of managed trade is a compromise between the interests of various groups in exporting and importing countries. The interests of producers in importing countries have been served by authorizing a set of bilateral quotas, and exporters have been promised that trade would be permitted to grow at some minimum specified rate.

The MFA and the country quotas it authorizes clearly conflict with the basic principles of the GATT. The GATT prohibits the use of quotas and discrimination by country. In extraordinary circumstances when imports "threaten serious injury to domestic producers," the GATT's "safeguard clause" (Article XIX) permits import restrictions, but they must be temporary and nondiscriminatory. In addition, the country imposing import restrictions is obliged to compensate foreign suppliers by making equivalent trade concessions against other imports. The members have sought to legitimate the MFA by making it a negotiated exception to the GATT. The resulting system of managed trade makes textiles and apparel one of the extreme exceptions to the GATT code. Agricultural trade is the other extreme example of noncompliance with GATT principles. The MFA does place conditions on acceptable quotas and each MFA expires on a specific date. National quotas and their implementation are subject to review by the Textiles Committee of GATT. However, each successive MFA has been more permissive about quotas than its predecessor, and MFAs can be renewed indefinitely.

A key feature of the MFA is the notion of "market disruption," which refers loosely to the harm done to a domestic industry by cheaper imports. The term has not been precisely defined, and critics have referred to market disruption as "pseudo-economics" (Sampson 1987). Market disruption is crucial to the operation of the MFA, because it has been used to justify protection in situations when it would not be appropriate under the general principles of GATT. One problem is that if markets are said to be disrupted whenever cheap imports are available, all trade is disruptive and trade restrictions could always be justified. Conversely, if market disruption is used in a narrower sense, it must be distinguished from concepts such as dumping that are well established in the GATT code. For example, if the source of market disruption is covered by the GATT safeguards code, injured parties are entitled to some relief from imports, but the prescribed relief (temporary, nondiscriminatory tariffs with compensation) is milder than the quotas authorized by the MFA. The vagueness of the notion of market disruption is a fundamental shortcoming of the MFA, and it has led some spokesmen from exporting countries

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to advocate abolishing the use of the idea in GATT (GATT 1988, p. 9).

A distinctive feature of the country quotas authorized by the MFA is that they have been used almost exclusively (Japan is the exception) against imports from low-income countries. Consequently, it looks like an agreement among affluent people to stifle economic growth in developing countries. Some of the leading textile exporters are high-income countries such as Italy, West Germany, and the United Kingdom, and their products are exempt from quotas. Indeed the existence of uncovered countries has been a major source of import growth in the United States (Hamilton 1988). The U.S. textile industry and Congress have favored eliminating exemptions and adopting global quotas, but the European Community has threatened retaliation.

History and Recent Developments

The present version of the Multifiber Arrangement (MFA-IV) took effect in 1986 and expires in 1991. The MFA is an international agreement permitting restrictions on textile trade that would otherwise violate the rules of GATT. The precise form of restrictions varies by importing country, and the system of import quotas imposed by the United States represents a continuation of the practice of protecting textiles and apparel at a higher rate than the average for all manufacturing. In 1983 the average tariff rate for all dutiable imports was 6 percent. For textiles and apparel, the trade-weighted average tariff rate was 21 percent (U.S. Congress, Congressional Budget Office 1986, p. 24). Thus, the MFA import quotas add protection to an industry that has already been favored by the tariff structure.

The precursor of the present system of import barriers was a five-year agreement, beginning in 1957, designed to restrict cotton textile imports to the United States from Japan. The immediate rationale for protection was a cotton policy that harmed American producers of cotton textiles. For 10 years beginning in 1956 a two-tier price policy for cotton made U.S. cotton more expensive inside the country than abroad (Keesing and Wolf 1980, chap. 2). To prevent U.S. cotton that had been dumped on the world market from returning as cotton textile imports, President Dwight Eisenhower invoked the power granted him by the Agricultural Act of 1956. He negotiated an agreement to restrict imports from Japan, the source of more than 60 percent of U.S. imports of cotton textiles at the time. Subsequent growth in U.S. textile imports from other countries and rising protectionist pressure in Europe led to the Short-term Arrangement on

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Cotton Textiles in 1961, followed by the Long-term Arrangement regarding International Trade in Cotton Textiles, 1962–73.

The increasing importance of wool and synthetic fibers led to the first Multifiber Arrangement (MFA–I) that was in effect 1974–77. It was followed by MFA–II (1978–81), MFA–III (1982–86), and the present MFA–IV (1986–91). Thus, a program that began as a temporary limit on cotton textile trade between Japan and the United States has continued for more than 30 years. It has become increasingly comprehensive in terms of exporting countries subject to quotas, importing countries imposing quotas, and product coverage. The current arrangement now applies to virtually all natural and synthetic fabric, after adding silk, linen, and ramie. New quotas are added regularly and the United States has even imposed a quota on cotton diapers.[1] If 30 years of preferential treatment has not given the U.S. textile and apparel industry enough time to adjust to import competition, how many more years are needed?

Changes in the MFA could be considered in the Uruguay Round of negotiations. Some representatives of developing countries were encouraged to sign the 1986 extension of the MFA because the Ministerial Declaration on the Uruguay Round promised to begin negotiations to return textile trade to the GATT rules. Early versions of the MFA contained provisions favorable to exporters, such as a guarantee that quotas would grow by at least 6 percent per year, and flexibility to shift unused quotas among product categories and years. Recent versions have been less generous to exporters. The International Textiles and Clothing Bureau, a group of 19 developing countries that export textiles, has proposed the termination of the MFA and all associated bilateral agreements (GATT 1988, p. 9).

Representatives of developed countries have resisted major liberalization of textile trade, and producers in some textile importing countries now interpret the MFA as a license to permanently restrict imports as a share of the domestic market. The European Commission has expressed a willingness to discuss returning textiles to the GATT rules, but European national governments have shown little interest in liberalization.

In the United States the Reagan administration resisted Congress's efforts to increase textile protection. The administration did tighten enforcement of the quota system and support the 1986 renewal of the MFA. President Reagan vetoed textile quota bills in 1985 and 1988 (a veto sustained by Congress on October 5, 1988). For the first

[1]At the time the quota was imposed, the domestic industry consisted of 60 workers at one plant (Farnsworth 1988, p. 30).

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time the 1988 bill would have imposed global quotas on imports of textiles and apparel, and it would have limited the growth of imports to 1 percent per year. The 1 percent growth rate would have applied to some developing countries whose imports have been growing at faster rates and to developed countries (except Japan) whose imports have been exempt from quotas.

The Textile Complex

Although textiles and apparel are frequently treated as a single industry, there are important economic differences among its component parts. Because of the differences, the United States may have a comparative advantage in producing textiles but not apparel. The end uses of the industry are conventionally divided into apparel, home furnishings, and industrial products. Apparel is more labor intensive than the other products, and technical change has occurred at a slower rate. Economies of large-scale production are less important in apparel, partly because changes in fashion prevent long production runs. Differences in labor intensity, scale, and technology have made the U.S. apparel industry more vulnerable to import competition than the rest of the textile complex.

In addition to classifying by end use, the textile complex can be divided into the production of fiber, fabric, and final products. Fiber is either natural (for example, cotton or wool) or synthetic. Since most synthetic fibers (polyester, nylon, acrylic, polypropylene) have a chemical base, they are usually produced by large chemical companies such as Dupont and Monsanto. Production of synthetic fiber is capital intensive, and major technical change has improved product quality and lowered cost. Consequently, the major exporters of synthetic fiber have been high-income countries. For example, in 1986 the United States was the world's tenth largest exporter of textiles (GATT 1987, p. 62). As the importance of synthetic fiber has increased, the MFA has evolved to cover both synthetic and natural fiber. The share of synthetic fiber in world fiber production increased from 22 percent in 1960 to 46 percent in 1988 (*Fiber Organon*, 1989, p.159). Thus, the United States and other high-income countries have some economic advantages in producing certain textiles that they lack in apparel production. The exemption of developed countries from import quotas reinforces this natural advantage. Economic differences between products can be seen by the fact that some developing countries, such as Hong Kong, are simultaneously importers of textiles and exporters of apparel. Movement toward liberalization of

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world trade might be beneficial to U.S. textile production even if it is harmful to domestic production of apparel.

The Textile and Apparel Industry in the United States

The textile and apparel industry is the largest employer in U.S. manufacturing, with 1,803,000 employees in 1988. However, industry employment has been declining since both textiles and apparel experienced peak employment in 1973. Industry employment as a share of total manufacturing employment has also been declining. The share of textile employment declined from 8.7 percent in 1950 to 3.7 percent in 1988. Apparel decreased from 9.1 percent of manufacturing employment in 1963 to 5.6 percent in 1988. Thus, declining employment in textiles and apparel in the 1980s is a continuation of a longer trend, and it would be misleading to attribute all employment effects to imports.

As part of worldwide structural change, textile and apparel employment has declined even more in Western Europe and Japan. Changes in the structure of world employment have not been limited to textiles: The U.S. steel and automobile industries have experienced greater decreases in employment (U.S. Congress, Congressional Budget Office 1986). In spite of falling employment in these traditional manufacturing industries, the unemployment rate for all workers declined in the United States during the 1980s.

The textile and apparel industry is concentrated in the southeastern United States, but the degree of concentration is greater for textiles (Chmura 1985). In 1982, 5 percent of all American workers were employed in textiles, but the comparable percentages were 32 percent in North Carolina, 36 percent in South Carolina, and 22 percent in Georgia. Apparel employment was 8 percent of national employment in 1982, but it was 11 percent of employment in North Carolina, 14 percent in South Carolina, and 17 percent in Georgia. The Carolinas and Georgia employed 60 percent of the nation's textiles workers in 1982, but only 17 percent of U.S. apparel workers resided in those three states. Geographical concentration has led to concern that displaced workers would find it difficult to find alternative employment in the same region, and that state and local governments could lose major sources of tax revenue. However, economic growth and diversification have created enough new job opportunities to keep state unemployment rates in the Southeast below the national average.

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Employees in textiles and apparel have been among the lowest paid U.S. workers, and earnings have fallen over time relative to all manufacturing employees. In textiles the average hourly earnings declined from 84 percent of national earnings in 1950 to 70 percent in 1983. In apparel, relative earnings declined from 82 percent in 1950 to 60 percent in 1985. The greater decline in apparel earnings reflects the difficulty of substituting capital for labor in apparel. As relative wages declined, the relative importance of female workers, black workers, and young workers increased.

Total output increased for both textiles and apparel while employment decreased. Increases in output per worker explain the divergent behavior of output and employment. Productivity grew in both sectors, but it grew faster than the all-manufacturing average in textiles and slower than that average in apparel (Cline 1987, p. 89). The pattern of productivity growth reflected greater investment and faster technical change in textiles.

Textile and Apparel Trade

The pattern of world trade supports the proposition that low wages are a bigger advantage to apparel producers than to textile producers. In 1986 the leading national exporters of textiles were West Germany and Italy, and 6 of the top 10 were high-income countries (United States was tenth). China, South Korea, Hong Kong, and Taiwan completed the top 10 (GATT 1987, p. 62). The discriminatory MFA quotas may have enhanced the exports of exempt countries.

The prominence of developing countries in apparel trade reflects the greater importance of cheap labor for clothing than textiles. In 1986 three of the four largest apparel exporters (Hong Kong, South Korea, and Taiwan) were developing countries, and China and Turkey also appear among the top 10 (GATT 1987, p. 66). All leading apparel importers (United States was first) were high-income countries except Hong Kong, whose import figures include re-exports.

Imports have become more important in the U.S. market for textiles and apparel, but there is some disagreement about the best way to measure the extent of import penetration. The main choice is between using a physical measure, such as square yards equivalent, or using a money value measure adjusted for inflation (see Cline 1987, pp. 47–51). Measuring the size of the domestic market is another problem, since consumption is not measured directly.

Table 1 shows import shares of the U.S. market for textiles and apparel, measured in terms of both real money value and physical volume. The physical volume measure consistently shows a higher

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TABLE 1

IMPORTS RELATIVE TO DOMESTIC CONSUMPTION (PERCENT)

	Textiles		Apparel		
	Value Measure[a]	Volume Measure[b]	Value Measure[a]	Volume Measure[b]	Import Share of Fiber Consumed by U.S. Textile Mills
1973	4.8	17.3	8.1	27.7	—
1974	4.5	15.6	8.6	25.2	—
1975	3.8	14.2	9.5	23.3	—
1976	4.1	17.1	11.8	28.1	10.6
1977	3.9	16.4	11.3	26.6	10.3
1978	4.6	18.5	13.5	30.6	12.3
1979	4.3	15.2	14.1	25.5	10.6
1980	4.6	16.8	14.5	27.8	12.1
1981	5.2	20.0	15.4	32.3	14.0
1982	4.9	21.0	15.8	32.4	16.4
1983	5.0	25.2	17.2	37.9	17.1
1984	6.5	31.7	22.0	46.8	22.8
1985	7.1	33.2	24.0	48.0	23.4
1986	7.9	—	25.4	—	25.4
1987	—	—	—	—	27.0

[a]Imports and domestic consumption measured in terms of real money value, as calculated by Cline (1987).

[b]Imports and domestic consumption measured in terms of physical volume, as reported by the American Textile Manufacturers Institute.

SOURCES: Cline (1987, pp. 35, 40); U.S. Congress, Office of Technology Assessment (1987, p. 80); U.S. International Trade Commission (1988, p. A5).

import share. For example, in 1985 the import share for textiles was 7.1 percent using the value measure and 33.2 percent using the volume measure. For apparel the shares were 24.0 percent using value and 48.0 percent using volume. One explanation for the discrepancy is that the average imported product is cheaper than the average domestically produced product with the same square-yard equivalent.

However, when examining *changes* in shares over the period 1973–85, both measures show the same general pattern. Import shares increased by both measures and nearly all of the increase occurred from 1981 to 1985.[2] This period showed substantial dollar appreci-

[2]A third measure, the import share of fiber consumed by U.S. textile mills, also shows that nearly all of the increase occurred since 1980.

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ation, and Cline (1987) has attributed much of the increase in imports to the strengthening of the dollar. In the case of textiles, the import share was nearly the same in 1980 (5 percent using value and 17 percent using volume) as in 1973. For apparel the import share also showed no change from 1973 to 1980 using the volume measure (28 percent), but the value share showed a sharp increase.

Data on sources of U.S. textile and apparel imports also indicate that cheap labor is more important for apparel than textiles. Over the 20-year period 1963–82, Japan's share of U.S. textile imports remained constant at 20 percent and India's share declined from 25 percent in 1963 to 5 percent in 1982 (GATT 1984). In 1982, 5 of the top 11 suppliers (Italy, United Kingdom, Canada, France, and West Germany) were high-income countries.

Conversely, in the case of U.S. imports of apparel, developing countries went from a position of moderate strength in 1963 to complete dominance in 1982. In 1963 Japan and Italy were the major suppliers and 6 of the top 10 were high-income countries. In 1982, 14 of the largest 16 suppliers were low-wage developing countries. Japan's share of U.S. apparel imports fell from 26 percent in 1963 to 3 percent in 1982, and Italy's share fell from 24 percent to 3 percent over the same period. It is generally agreed that high-wage developed countries have lost their comparative advantage for most types of apparel.

Implementation of the U.S. Import Quota System

Under the MFA the United States has negotiated 41 bilateral quotas (at the end of 1987) with exporting countries for various categories of textile and apparel products. With the exception of Japan, all developed countries were excluded from the quotas, but all major suppliers from developing countries were included. Some preference was given to Caribbean countries as part of President Reagan's Caribbean initiative.

The effects of quotas and tariffs must be combined to obtain the total rate of protection for textiles and apparel. The tariff equivalent of a quota is the tariff rate that would result in the same domestic price and quantity of imports as a given quota. For 1986 when U.S. tariff rates were 12 percent for textiles and 22.5 percent for apparel, Cline (1987, p. 191) estimated the combined effect of tariffs and quotas to be 28 percent for textiles and 53 percent for apparel. An important difference between tariffs and quotas is that the tariff revenue that would have gone to the U.S. government is transferred to foreign suppliers under quotas. This revenue is called quota rent,

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and it is a major component of the cost of quotas. The quota rent could be kept in the country if the U.S. government auctioned the quotas.

The U.S. government has divided textile products into four broad categories with many subdivisions. The broad categories are cotton; wool; synthetic; and silk, linen, and ramie (added in 1986).[3] For each narrow category, import quotas have been established for each supplying country. Quotas are expressed in physical units rather than money value. A typical category is men's and boys' cotton knit shirts from Hong Kong. Management of textile imports has become so complex that a summary of country and product quotas required nearly 170 pages (U.S. Congress, Congressional Budget Office 1986).

The number and size of product and country quotas change over time. Quotas are monitored by an interagency committee (Committee for the Implementation of Textile Agreements), which includes representatives from the U.S. Trade Representative and the Departments of State, Labor, Treasury, and Commerce. The committee can issue "calls for consultation" with exporting countries if imports are deemed excessive, and the majority of these calls have resulted in quotas against previously unrestricted imports (Pelzman 1988a, p. 11). From 1972 to 1983 calls for consultation were not made without satisfying rigorous guidelines for proof of injury. Those guidelines were relaxed in December 1983, and the frequency of calls has increased (Pelzman 1988a, p. 10). As an interested party, the U.S. textile industry makes quota suggestions to the committee. Industry spokesmen have complained about gaps in the quota system and about a permissive administration that permitted a large increase in import share of the domestic market during the 1980s. Among the problems facing administrators of the program are verifying the country of origin and the product category of imports. A textile bureaucracy has grown to administer the program. The Commerce Department has the greatest responsibility, including deputy assistant secretary for textiles, but the State Department also has a deputy assistant secretary for textiles, and the U.S. Trade Representative has a special textile negotiator. In addition to these direct costs of administering the program, an additional burden is the time and money spent by domestic producers, consumers, and retailers trying to understand the program and influence it.[4]

[3]Each broad category has been subdivided in the following way: 41 cotton categories; 24 wool categories; 44 synthetic categories; and 25 silk, linen, and ramie categories.

[4]See Destler and O'Dell (1987) for a discussion of lobbying efforts designed to influence textile imports.

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Some established quotas have not been binding, and many quotas have not been filled. Firms in countries with quotas may lack a cost advantage for those products. Cases in which binding import quotas have had economic effects can be divided into four types. In the first case, consumers switch from imports to domestically produced textiles and apparel; total imports decrease and employment increases in the domestic industry. In the second case, importers switch from suppliers in countries subject to quotas to suppliers in exempt countries; there is no effect on total imports or employment in the domestic industry.

In the third case, imports from quota countries decline, but there is an upgrading effect on product quality and price. An upgrading effect of quotas has also been observed for other products such as automobiles and dairy products (Cline 1987, Anderson 1988, and Teal et al.1986). In the fourth case, quotas induce buyers to switch their demands to products (domestic or imported) other than textiles and apparel. In this case, textile and apparel imports decrease, but there is no corresponding benefit for the domestic industry. In all four cases consumers are harmed, but domestic producers benefit only in the first case. The relative importance of the four cases determines the costs and benefits of quotas for workers and consumers, and quantitative estimates are provided in the next three sections of this paper.

Evidence indicating that certain quotas are binding comes from Hong Kong, where quotas are traded in an open market (Morkre 1979, Hamilton 1986). The price an exporter would be willing to pay for the right to sell in a given import market reflects the difference between the price he expects to receive for his product in that market and the price he could receive in a market not subject to a quota. For example, if a certain men's shirt sells for $13 in Hong Kong and $15 (net of transport cost and tariff) in the United States, a firm would be willing to pay up to $2 per shirt for a quota. The market value of a quota has been used to measure the price-enhancing effect of the quota system or its tariff equivalent.

Effect of Protection on Consumers

The cost of textile protection falls mainly on consumers. Protection raises the price of each category of imported and domestic textile product, and it distorts the mix of imported products toward more expensive varieties. Many studies of consumer costs have been done, and they vary in terms of product coverage, time period, analytical techniques, and other details. However, there is considerable agree-

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ment about the main conclusion, namely, consumer costs are large relative to the value of jobs saved by quotas and tariffs.

The 1987 study by Cline is one of the most comprehensive and careful analyses, and its results will be summarized here. His estimates are near the middle range of cost estimates appearing in the literature. Cline and most other authors treat imported textiles and apparel as imperfect substitutes for domestically produced products. For example, a 10 percent rise in prices of imports would cause prices of substitute domestic products to rise by less than 10 percent. The estimated consumer costs have three components: the increase in prices of imports, the increase in prices of related American products, and the consumer loss due to the decrease in quantity of imports attributable to protection.

Cline's estimate of the consumer cost of import quotas and tariffs on textiles and apparel for 1986 was $20.344 billion (Table 2). The cost of apparel restrictions ($17.556 billion) far exceeded the cost of textile restrictions ($2.788 billion). These consumer costs result from a higher price for imports (21.9 percent higher for textiles and 34.6 percent higher for apparel), a higher price for domestic products (3.1 percent higher for textiles and 18.9 percent higher for apparel), and a smaller quantity of imports (29.8 percent lower for textiles and 56.7 percent lower for apparel). The total cost of $20.344 billion can be

TABLE 2

CONSUMER COST AND JOBS SAVED IN 1986

	Textiles	Apparel	Total
Consumer Cost ($ million)	2,788	17,556	20,344
Net Welfare Cost ($ million)	811	7,317	8,128
Jobs Saved Direct	20,700	214,200	234,900
Jobs Saved Indirect	32,706	167,100	199,806
Total Jobs Saved	53,406	381,300	434,706
Consumer Cost per Total Job Saved ($)	52,204	46,052	
Consumer Cost per Direct Job Saved ($)	134,686	81,973	
Earnings per Job per Year ($)	13,600	11,180	
Consumer Cost ÷ Earnings			
Total Jobs Saved	3.8	4.1	
Direct Jobs Saved	9.9	7.3	

SOURCE: Cline (1987, chap. 8).

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translated into a cost of $238 per year for every American household. Only a fraction of this amount is recouped by American workers and firms. Most is transferred to foreign producers as quota rent or is a deadweight loss.

In addition to their effects on consumers of finished goods, quotas and tariffs also affect businesses that buy textiles and apparel as intermediate products. For example, quotas could harm the domestic auto industry by raising the cost of automobile interiors. Clothing quotas also increase costs of the retail clothing industry. The result is higher prices for buyers of clothing and fewer jobs in the retail sector.

The proposition that retailers shift cost changes onto consumers has been disputed by proponents of quotas (U.S. Congress, Office of Technology Assessment 1987, pp. 92–94). These proponents claim that retailers have absorbed the entire cost of more expensive imports and that eliminating quotas would return retail profits to their earlier level. This contention is inconsistent with theoretical notions about cost-shifting in a competitive market and with empirical evidence about retail-wholesale price relationships in many markets. For example, increases in retail gasoline prices from 1974 to 1980 reflected large increases in wholesale prices of oil, and retail gasoline price decreases after 1980 reflected similar decreases at the wholesale level. Consumers were not completely shielded from the wholesale price changes by offsetting changes in retail margins for gasoline. Retail clothing stores can be expected to shift cost changes to consumers in the same way as other competitive firms. Indeed, the retail clothing industry is one of the most competitive sectors in the U.S. economy.

In addition to making textiles and apparel more expensive, import quotas restrict consumers' choices. Because quotas are expressed in physical units (for example, men's cotton shirts), they provide foreign exporters an incentive to upgrade the mix of products that satisfy the quota. This distortion of the product mix has an adverse effect on retail stores and consumers who specialize in simple, low-price products. For example, discount stores and their customers would be harmed by the quotas more than exclusive shops selling designer clothing.

The present system of "voluntary" quotas administered by foreign countries is just as harmful to American consumers as a mandatory quota system administered by the United States. However, the voluntary quotas are more favorable for foreign suppliers, because they are able to sell their entire quota of imports for a higher price in the United States than they would receive in other markets. The value

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of the benefits from selling in the United States at a premium price is reflected in the market for quota rights in Hong Kong (Hamilton 1986). Americans would appropriate this quota rent if the U.S. government administered mandatory quotas. If licenses were issued to American importers, they would be able to buy textiles and apparel at competitive world prices and resell them in the United States at higher prices. Alternatively, the U.S. government could capture this scarcity value by auctioning import licenses to the highest bidders or by imposing an equivalent tariff.

Because they have different effects on consumers with different income levels, textile quotas alter the distribution of national income. Consumer budget shares for apparel are smaller at higher income levels. For example in 1984, the quintile of households with the highest incomes received 48 percent of total income but accounted for 37 percent of apparel consumption (Cline 1987). The quintile with the lowest incomes received 3 percent of national income and accounted for 10 percent of apparel consumption. Thus, higher apparel prices caused by quotas have a greater relative effect on lower-income households. The distortion of the product mix away from simple, inexpensive product lines reinforces this discrimination against lower-income groups.

Import quotas also influence the distribution of income by protecting textile and apparel workers from temporary unemployment. Quotas also protect the value of equities held by shareholders of textile firms. In the distribution of income, apparel workers are in the second lowest quintile of incomes and textile workers are in the middle quintile. Stockholders of protected firms are concentrated in the higher-income quintiles. Cline (1987, p. 201) has concluded that import quotas have a regressive effect on the distribution of income.

Effect on Production and Employment in the Industry

Because of the MFA quotas and tariffs, producer prices of imported textiles and apparel have been higher than they would have been, and prices of domestic substitutes have also been higher. The increases attributable to protection have been 3.1 percent for textiles and 18.9 percent for apparel.[5] Industry employment in 1986 was 669,000 in textiles and 1,133,000 in apparel. Industry jobs saved directly

[5]Cline (1987) assumed unitary elasticity of domestic supply and that industry employment would decline by the same percentage as industry output.

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(Table 2) by higher product prices were 20,700 in textiles and 214,200 in apparel (Cline 1987, p. 191).[6]

In an attempt to avoid understating jobs protected, Cline also calculated jobs saved indirectly in industries selling inputs to textiles and apparel. This practice is questionable because no adjustment is made for jobs destroyed in sectors buying textiles and apparel, such as automobiles and retail sales. Jobs saved indirectly are 32,706 in textiles and 167,100 in apparel (Table 2). The sum of direct and indirect job saving (53,406 for textiles and 381,300 for apparel) can be taken as an upper bound for the effect of protection on industry employment.

The consumer cost of protection can be compared with the number of jobs saved in the industry. The consumer cost per total job saved was $52,204 per year for textiles and $46,052 per year for apparel (Table 2). When only direct job saving is considered, the cost figures are $134,686 per year for textiles and $81,973 for apparel. The value of a job can be measured by actual earnings of workers in the industry. In 1986 the average textile worker earned $13,600 per year, and the average apparel worker earned $11,180 per year. Thus, when the upper-bound figure (total jobs) for jobs protected is used, the consumer cost is 3.8 times the value of jobs saved for textiles and 4.1 times the value of jobs saved for apparel. The comparable figures for direct jobs saved are 9.9 for textiles and 7.3 for apparel. The general conclusion that consumer costs are several times as great as worker benefits also emerges from other studies.[7] An implication of these results is that consumers should be able to compensate workers who would be displaced by freer trade in textiles and apparel in such a way that everyone would be better off than with the present system. For example, consumers of apparel who would gain $46,052 per year from freer trade should be willing to pay $15,000 per year in adjustment assistance to displaced apparel workers who would have earned $11,180 per year.

In fact, employment has declined in the U.S. textile and apparel industry in spite of the MFA quotas. Declining employment in the U.S. industry is part of a broader pattern of decline in textile employment that includes Western Europe and Japan, and the trend is likely to continue regardless of what happens to the MFA. Recent developments are part of the same trend that caused the industry to move from New England to the American Southeast in search of cheaper

[6]Hufbauer et al. (1986) found a greater employment effect (300,000) and DeMelo and Tarr (1988) found a smaller effect (150,000).

[7]See Cline (1987, p. 198) for a summary. Also see DeMelo and Tarr (1988).

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labor. Decreases in industry employment present problems for individual workers and communities, but alternative employment is easier to find when the national economy is growing. Even though textile and apparel employment has declined, the national unemployment rate has declined from 9.5 percent in 1982 to less than 6 percent in 1988. Moreover, there has been high employment growth and low unemployment rates in textile and apparel states.

Net Cost of Textile Protection

To determine the prudence of textile protection, one must compare the costs borne by consumers with the benefits from avoiding temporary unemployment (Table 3). The average worker displaced from textiles was unemployed for 13.3 weeks and from apparel for 24.8 weeks. The foregone output of these workers can be valued at their average hourly earnings of $6.80 in textiles and $5.59 in apparel. The

TABLE 3

COSTS AND BENEFITS OF IMPORT RESTRICTIONS

	Textiles	Apparel
Benefits		
Benefits per Direct Job Saved ($)	3,590.00	5,046.00
Weeks Unemployed	13.3	24.8
Average Hourly Wage ($)	6.80	5.59
Average Hours per Week	39.7	36.4
Jobs Saved Direct	20,700	214,200
Total Benefits Direct Jobs ($ million)	74.3	1,080.0
Benefits per Indirect Job ($)	7,411.00	7,411.00
Weeks Unemployed	19.2	19.2
Average Hourly Wage ($)	9.53	9.53
Average Hours per Week	40.5	40.5
Jobs Saved Indirect	32,706	167,100
Total Benefits Indirect Jobs ($ million)	242.0	1,240.0
Total Benefits All Jobs ($ million)	316.3	2,320.0
Costs		
Welfare Cost per Year[a] ($ million)	811.0	7,320.0
Total Cost as Capital Value at 10% ($ million)	8,110.0	73,200.0
Total Cost/Total Benefit	25.7	31.6

[a]Consumer cost minus tariff revenue minus transfer to domestic producers.
SOURCE: Cline (1987, ch. 8).

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benefit per job saved by protection is obtained by multiplying average hourly earnings by average hours worked per week and average weeks unemployed. The resulting benefits per job saved are $3,590 in textiles and $5,046 in apparel. Multiplying by the total number of jobs saved yields total benefits of $316 million for textiles and $2,320 million for apparel. Since unemployment associated with imports is temporary, the benefits from avoiding unemployment are received only one time. Conversely, consumer costs in the form of higher prices must be paid in every period.

To compare the annual consumer cost of import restrictions with the once-for-all benefit from avoiding unemployment, one must convert the consumer costs into a capital value. At a discount rate of 10 percent, consumer costs are $8,110 million for textiles and $73,200 million for apparel. The consumer costs are 25.7 times the benefits from avoiding unemployment for textiles, and costs are 31.6 times the benefits for apparel. Thus, import quotas are a very expensive way of avoiding unemployment in textiles and apparel. For example, consumers would be able to compensate displaced workers an amount equal to 10 times their forgone earnings under freer trade and still be better off than with import quotas.[8]

The precise results of all cost-benefit studies of textile import restrictions depend on the values of certain key parameters. The most important are the following: (1) the increase in the price of imports caused by the quotas (tariff equivalent), (2) substitutability between imports and domestic products, (3) the response of retail prices to import prices (pass-through), (4) the price responsiveness of domestic supply, and (5) the collective power of U.S. importers in the world textile market. Varying the combination of parameter values has resulted in differences in precise money values for costs and benefits. In spite of much experimentation with parameter values and types of economic models, no published studies have produced results showing benefits from textile import restrictions that exceed costs.[9]

However, import quotas would become much less costly to the country if the quota rents were appropriated by Americans rather than foreign suppliers.

[8]DeMelo and Tarr (1988) found consumer costs to be a larger multiple of benefits.

[9]The American Textile Manufacturer's Institute commissioned a study purporting to show that import quotas are cost effective. Cline has summarized the results, but the study has not been published and is not very accessible to researchers. A number of studies of textile quotas appear in Grennes (1988).

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Effects on Textile Exporters

Textile quotas have been imposed almost exclusively against developing countries. The textile sector has played a key role in the development process, and the traditional pattern has been for new producers to successfully challenge suppliers in higher-income countries. Nearly all successful newly industrialized countries have become textile exporters. Officials in low-income countries recognize the MFA as a barrier to economic growth, and they have opposed its expansion. In the 1986 discussion of renewing the MFA, India, Pakistan, and Bangladesh all supported immediate termination of the MFA and restoration of the GATT rules to textile trade.

Bangladesh is an example of the contradictions inherent in the economic policies of the developed countries. Bangladesh is one of the poorest countries of the world with per capita income of $130 in 1986. In recognition of this poverty it received more than $10 billion in foreign aid in the last 10 years from various developed countries. For years efforts have been made to develop some export in addition to jute, which earned most of the country's foreign exchange. With the assistance of Korean investors, a clothing industry began to develop, but soon after Bangladesh became an exporter, MFA quotas were imposed by the United States, the United Kingdom, France, and Canada (Spinanger 1987). There is a clear conflict between the trade policies of these countries and their aid policies.

Under the MFA, exporting countries do receive some benefits that mitigate the damage done by quotas. Because exporters are allowed to administer the quotas, developing countries are able to appropriate the quota rent that Cline (1987) estimated to be $3,834 billion dollars in 1986.[10] The existence of quota rent has weakened the opposition to the MFA by developing countries, but the net effect of quotas on exporters has been adverse. According to a study by Irene Trela and John Whalley (1988), all textile exporters are harmed by quotas, including those receiving the most quota rent. It is possible that the orderly and limited set of restraints under the MFA are less harmful than unilateral and uncoordinated protection that might occur otherwise. However, recent behavior by Congress and the president indicate that U.S. import policy is not constrained by the MFA.

Reforming Textile Trade Policy

Future textile trade policy could become more protectionist. Each successive version of the MFA has been more comprehensive in

[10]Pelzman (1988b) estimated the value of quota rent to be $1.8 billion in 1986.

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terms of products and countries covered. In the United States, import growth from major suppliers has been limited to 1 percent per year, and Congress has attempted to extend that limit to all suppliers. Congress acts as if it is not bound by the MFA promise of "expansion and liberalization of trade."

However, the case in favor of liberalizing trade in textiles and apparel is overwhelming. The MFA and the related national quotas are an extremely costly way to protect workers. Quotas impose costs on consumers and the retail sector that greatly exceed the benefits to workers. These quotas sharply conflict with the national policy of promoting growth in developing countries and are a prototypical special interest program whose existence has been promoted by effective lobbying. The lobbying effort has been made easier by the fact that the protected workers and firms are smaller in number and more geographically concentrated than textile consumers.

In spite of the political bias against consumers, lobbying by consumer and retailer groups helped to prevent Congress from overriding vetoes of the 1985 and 1988 U.S. textile trade bills (Destler and Odell 1987). The European Commission has also demonstrated its awareness of the potential gains from textile trade liberalization. Representatives of several developing countries that export textiles are strongly in favor of trade liberalization. The political potential for liberalization arises from the possibility of compensating workers in such a way that both consumers and textile workers benefit from freer trade. The potential for international agreement on textile trade would be greater if exporting countries made trade concessions in return for greater market access. Concessions by exporting countries could take many forms including lowering their own barriers to textile imports (Cline 1987). Thus, it may be in the interest of developing countries to abandon their traditional request for "special and differential treatment" in GATT negotiations.

It would seem appropriate for the U.S. government to recognize important economic differences between the textiles and apparel sectors. The potential for applying modern technology, the importance of large-scale production, and the capital intensity of textiles provide great potential for the U.S. textile industry, which is already a major exporter. However, the greater labor intensity of apparel and limited potential for technical innovation and economies of large-scale production would appear to place the U.S. apparel sector at a long-term disadvantage relative to lower-wage producers in developing countries. It may be in the interests of American trade negotiators to emphasize the potential benefits of worldwide trade liberalization for the U.S. textile sector. Liberalization could increase the

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number of labor-abundant developing countries, like Hong Kong, that import textiles and export apparel.

Many reform proposals have been offered, but the primary goal of most reforms is to eliminate the special protection of the textile sector and bring textile trade back into compliance with the GATT rules. Basic reform requires abolishing the MFA and substituting nondiscriminatory tariffs for national quotas. Each country would agree to bind its textile tariffs, and the level of tariffs would be subject to the same negotiation process as tariffs on other products. To mitigate adjustment problems for textile importing countries, a conversion of quotas to tariffs should be phased-in over time and displaced workers should be compensated. If discussion of reform begins now, liberalization could begin to take effect when MFA–IV expires in 1991.

Three reform proposals exist to convert quotas into tariffs, but they differ in terms of the form of protection during the transition period. In one case a combination tariff-quota would be used during the transition. A second proposal would auction quotas for imports from countries now covered by the system. A third proposal would convert current country quotas into global quotas and auction them to the highest bidder. In all three cases, quotas would grow fast enough until they were no longer binding, and nondiscriminatory tariffs would be the only remaining form of protection.

Cline (1987, chap. 11) and Gary Sampson and Wendy Takacs (1988) have proposed a combination tariff-quota that would consist of a standard nondiscriminatory tariff on all imports plus a tariff surcharge on units in excess of the quota. Initial quotas would be set at current (or some base period) levels, and surcharges would be set equal to the tariff equivalent of current quotas, estimated by Cline (1987) to be 15 percent for textiles and 25 percent for apparel. Thus, the initial level of textile protection would be the same as the current level, the U.S. government would collect the same tariff revenue, and foreign suppliers would retain their quota rents. Gradually quotas would increase until they were no longer binding, and surcharges would decline to zero. The only function of the tariff surcharge is to permit imports beyond the quota if import demand is greater than expected. Once quotas became ineffective, the only remaining protection would be standard tariffs of 10 percent for textiles and 22.5 for apparel, which would be subject to GATT negotiation. Textile exporters currently exempt from quotas would retain their exemption. The value of quota rents would decline gradually during the transition from the current level to zero.

A second alternative proposed by C. Fred Bergsten et al. (1987) would retain quotas for those suppliers now subject to quotas and

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would auction the quotas to the highest bidder. The equivalent of quota rents would be appropriated by the U.S. government and governments of other importing countries. Market forces would determine the value of a quota, and the market value would be the same as an accurate estimate of the tariff equivalent of quotas. Thus, the value of quota per unit should equal the initial tariff surcharge in the tariff-quota scheme. The size of quotas would increase over time until their auction value declined to zero. The additional revenue would be an advantage to governments of importing countries, but exporting countries might raise the question of compensation. However, the long-run benefits to exporters from trade liberalization would exceed the loss of transitional quota rents.

A third alternative proposed by Gary Hufbauer and Jeffrey Schott (1985) would convert current national quotas into global quotas and increase them gradually until they were no longer effective. Global quotas would grow and national quotas would decline and be transferred to the pool of global quotas. Global quotas would be auctioned, and quota rents would be transferred to importing countries. A distinguishing feature of the plan is that all exporting countries would be subject to quotas for the first time, which would cause problems for relations with the European Community.

All three proposals for the transition period achieve the main goal of converting national quotas into tariffs. The main differences are (1) whether to retain exemptions for certain textile suppliers during the transition period, and (2) whether to auction quotas or use tariff-quotas. My own preference is to retain exemptions and to auction quotas to the highest bidder. Exemptions would preserve some consumer protection, and it would avoid the issue of retaliation by the European Community. Given the concern about budget deficits, the revenue from auction quotas should be welcomed by Congress and the president. The 1988 textile trade bill contained a provision to auction a fraction of import quotas. A practical advantage of auction quotas is that the price of a quota would be market determined, whereas in the case of tariff-quotas the appropriate level of the tariff surcharge would require statistical estimation.

Although complete abolition of import quotas has strong economic justification, less extreme reforms still would be preferable to the status quo. If quotas were retained, the rate of growth could be increased and quotas could be auctioned. The scope for consumer choice would be increased by broadening import categories and reducing the number of categories. One possibility is reducing the number of categories to four: cotton; wool; synthetic; and silk, linen,

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and ramie. Or a more sweeping change would consolidate the multitude of current categories into one broad textile and apparel category.

A variety of worker compensation schemes can be devised, and they are feasible because the gains to consumers from freer trade exceed the losses to workers. The total cost of worker compensation could be limited by restricting eligibility to workers employed in the industry at the beginning of the program. Identification of potential claimants could be accomplished by registering workers at that time. Practical considerations would probably limit the amount of time displaced workers could receive adjustment assistance, but consumer benefits from freer trade would be so large as to justify paying displaced workers their foregone earnings indefinitely. If trade liberalization were phased in, the rate of decline in industry employment need not exceed the rate of natural attrition resulting from employees retiring (2 percent per year in textiles and 2.2 percent per year in apparel) and quitting (1.8 percent per year in textiles and 2.5 percent per year in apparel). If we limit adjustment assistance to workers employed at the inception of the program, ineligible new workers would receive an explicit warning signal about the riskiness of industry employment. One problem with protection is that it sends the wrong signals to employers and employees. It leads to hiring people who become an adjustment problem later. For example, a large fraction of current textile and apparel employees were not employed (some were not even born) and would not have been employed in the industry in absence of protection that began in 1957.

If the MFA quota system were abolished, what grievance procedure would be available to U.S. producers of textiles and apparel? If imports are being dumped on the U.S. market, the U.S. Anti-Dumping Law is relevant. If foreign governments are subsidizing their exports to the United States, the GATT code on subsidies is applicable. However, if textile products are imported because of lower wages, high productivity, or superior quality, they are perfectly legal, and it would be inappropriate to deprive American consumers of the benefits. In general, textile producers should have access to the same safeguards procedure as all other industries. The notion of "market disruption," which has been used to justify textile protection, has not been useful; it should no longer be used in the GATT.

Conclusion

The Multifiber Arrangement has not been a successful experiment. Evidence since the MFA began in 1974 indicates that using the political process to determine market shares for textiles comes at a

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high cost. The MFA was designed as a compromise between the interests of exporting and importing countries, but neither group has been well served by the MFA.

After more than 30 years of extraordinary protection, U.S. textile producers have had ample time to adjust to competition from imports. The MFA quotas have imposed high costs on U.S. consumers, costs that are far in excess of workers' gains. By retarding economic growth in low-income countries, the MFA conflicts with the foreign policy goals of the United States and other high-income countries. The MFA quotas have not served even domestic textile producers well. The complexity and uncertainty of the present discriminatory system make it difficult to understand, and the program has generated a wasteful bureaucracy.

Because the costs of MFA quotas are so large relative to worker benefits, it is time to change the direction of textile trade policy. The MFA should be abolished and nondiscriminatory tariffs should become the sole form of textile protection. Textile trade then would return to compliance with the GATT rules and trade would be determined by economic considerations rather than political forces.

To soften the impact on the domestic industry, tariffs should replace quotas only after a transition period, beginning in 1991 when MFA–IV expires. Auction quotas are a convenient device to use during the period of adjustment. The initial level of protection during the transition should be equal to the current level of protection under MFA quotas, and quotas should be increased gradually until the only binding protection is a nondiscriminatory tariff. The large excess of consumer cost over worker benefits implicit in the current MFA would permit adequate compensation of displaced workers.

There is no need for special rules concerning textile trade or a special textile bureaucracy in national governments or in the GATT. Grievances of domestic textile producers should be handled by the same agencies using the same rules that apply to other products. Problems related to "surges" of textile imports or "unfair" trade practices should be handled by the GATT's safeguard mechanism that permits temporary tariffs, provided exporters are compensated.

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Toward an Open World Order: A Constitutional Economics Approach

Peter Moser

> That freedom cannot be maintained without order is hardly disputed. That order cannot be maintained (for long) without freedom may be more difficult to understand, or easier to forget, but is equally true.
>
> —Jan Tumlir (1977, p. 19)

Introduction

Some economists argue that the absence of an international government is a serious hindrance to an open world order. In this paper, I explore the nature of an international order and argue that an adequate legal framework within nations provides the necessary institutional structure for the emergence of an international order. Moreover, the advantage of being an attractive partner for international transactions creates an incentive for nations to create sound legal institutions. However, it will be seen that the relaxation of constitutional constraints on the national political process has made it difficult to maintain an open world order. Increasing governmental regulations that tend to be biased against international transactions

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are at the source of the constitutional crisis affecting national and international economic order.

The paper also discusses the potential role of international policy commitments in restoring an open world order. I assert that international agreements can have a function similar to national constitutional rules. In the realm of foreign trade policy, such agreements can be understood as a set of policy commitments exchanged among governments, with the goal of suppressing national policies that reduce access to foreign markets. After the introduction of international commitments into domestic law, national courts would be charged with their enforcement. This idea has been most prominently advocated by Jan Tumlir whose constitutional economics approach to a stable world order has strongly influenced my thinking.[1]

Constitutional economics focuses on the crucial distinction between rules and outcomes.[2] The main argument is that social interactions are conditioned not only by resource constraints but also by the set of rules or institutional arrangements that govern the choices of individual actors. Rules define the framework within which these ordinary choices are made. Rules shape the structure of incentives and therefore have an important influence on outcomes. The analysis implies that if the limits to individual behavior are well defined and the rights are recognized and accepted, social interaction will proceed in an orderly fashion. An order will emerge within which the interdependent behavior of separately motivated individuals is reconciled to generate patterns of outcomes that are tolerable to the participants. Mutual agreement on defined rights facilitates voluntary exchanges that coordinate specialized activities and enhance the individual welfare of all parties to the agreement.

In the following section, the concept of an international economic order is developed. The potential contribution of international institutions toward orderly international transactions is discussed in the third section, and the fourth section draws some conclusions for further analyses of the institutional structure for an open world order.

[1]See Tumlir (1977, 1979, 1980, 1983a, 1983b, 1984, and 1985). A survey of his main ideas is given by Hauser, Moser, Planta, and Schmid (1988). Other authors who take a similar approach to world economic order are Abbott (1985); Hauser (1986, 1988); Hauser, Moser, and Schmid (1987); and Petersman (1986, 1988). See also Dorn and Niskanen (1989).

[2]See Buchanan (1975), Brennan and Buchanan (1985), and Vanberg and Buchanan (1988). A survey of constitutional economics is given by Buchanan (1987a, 1987b), and by Gwartney and Wagner (1988, chaps. 1–2).

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The Concept of International Order

In a world economy with more than 100 independent countries, people derive their productivity from a high degree of specialization based on comparative advantages. As Adam Smith pointed out, the ability to exploit individual talents is made possible by the greater number of exchanges generated by the extension of markets.

International Order as a Reflection of National Order

The conditions that facilitate exchange on the national level are equally important for international transactions. First, the property rights involved have to be clearly demarcated. The limits to individual behavior have to be well defined and mutually recognized. Second, the property rights should not be subject to unpredictable changes resulting from governmental interventions. Constitutional limits that require a large majority for redefining property rights are necessary to reduce uncertainty about the legally enforceable bundle of rights.

International transactions are characterized as exchanges that take place between individuals living in different jurisdictions that have no common enforcement agent or common government. The link between the different jurisdictions is provided by their respective courts. If each court enforces international contracts treating the claims of foreigners equally to those of its own citizens, the courts facilitate nonsimultaneous international exchanges. The contracting parties know that in case of a disagreement they can use national enforcement agencies to settle disputes.

But what happens if the property rights are assigned differently in the involved countries? What law applies? Almost every country has established rules that instruct the courts when to exercise jurisdiction and when to apply foreign law in cases involving foreign elements. These rules constitute what is known as private international law. Before they enter an agreement, it is important that the contracting parties know what law will be applied in what situations; when the different property right assignments are known, the parties can take them into account. Hence, different property rights do not necessarily hinder international exchanges.[3]

[3]Even if the different property right assignments and rules are known, the problem of peculiar circumstances remains. Contracts do not include provisions for every contingency that arises ex post. Such contingency may make the contract meaningless or impossible to carry out. The task for lawyers is either to imagine what the parties would have agreed on if they had known the circumstances or to apply an existing rule that solves the case at hand. These rules may vary from jurisdiction to jurisdiction, perhaps to the surprise of the contracting parties. Consequently, international contracts are characterized by a higher degree of uncertainty, given the fact of incompletely specified contracts. I am indebted to Lytton Stoddard who brought this point to my attention.

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The point of my argument is that international transactions need not rely on an international enforcement agency. The lack of a world government is not a genuine problem for the emergence of international order. The different national institutions can be used to protect the claims of individuals involved in international exchanges. If individuals can decide for themselves from whom to buy, if currencies can be exchanged easily, if national constitutional rules prevent government from unpredictable interference with property rights assignment, and if courts enforce international contracts, then an open world order can be expected to emerge. Such an order is the reflection of different national constitutional regimes and will greatly enlarge individuals' opportunities to engage in voluntary exchange.

International Order as a Public Good

Before analyzing the reasons for the deterioration of the international order, its public good characteristics have to be discussed. Some economists and political scientists argue that an open international order is an international public good that will not be supplied by any government, except in the case of a leading power—a so-called "hegemon." In the absence of a hegemon, an international government is needed to provide the open world order.[4] The conclusion that national enforcement structures can provide the appropriate legal framework for international order obviously contradicts this argument. The question is, "What are the incentives to create the appropriate institutions within nations?"

To analyze the public good aspect of international order, we must assume that governments enforce contracts among their citizens. Given this setting, I will consider the benefits for individuals when their own government also enforces contracts between members of the society and nonmembers.

The first situation to examine is one in which keeping track of individual compliance in international contracts is costless. Everyone knows how often someone has failed to fulfill contracts. In this case, each individual bears the costs of defaulting in the sense that if a person does not fulfill a contract, it will be more difficult for him to conduct further transactions with any foreigner. Individual interest

[4]A prominent proponent of this argument is Kindleberger (1987, p. 7), who identifies international public goods with "an open trading system, including freedom of the sea, well-defined property rights, standards of weights and measures that may include international money, or fixed exchange rates." He argues (p. 2) that the underproduction of these international public goods is a "serious problem in international political and economic relations in the absence of international governments." For a review of the discussion, see Conybeare (1984).

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in being an attractive partner for international transactions would generate by itself an incentive to honor contracts with foreigners."[5] In this instance, there is no need for governmental enforcement of international contracts.

It is obvious that monitoring individual compliance records in a worldwide setting is costly. Let us assume the extreme case in which keeping track of individual compliance is impossible. It is not feasible to know in advance who are the "cooperators" and who are the "defectors." If one citizen can refuse to carry out contractual obligations in international transactions without being punished by a national enforcement agent, foreigners will take into account, in future transactions involving members of this society, that this enforcement institution does not protect foreign claims appropriately. Foreigners, therefore, will be more reluctant to enter a contract with members of this society than when their claims are strictly enforced. The nonenforcement or infrequent enforcement of foreign claims reduces the "compliance capital" of all citizens acting under the same enforcement institution. The noncompliance of some members creates negative externalities for other members of the same society. The defaulting citizen produces a national public bad.

These negative externalities indicate that gains may be captured through exchanges that reduce the externalities. We would expect that institutions emerge to lower the high costs of monitoring. For example, people may specialize in monitoring, or trade associations may be formed that guarantee the compliance of their members. Another way to increase compliance capital is for individuals to agree to have their government enforce foreigners' claims the same way it enforces the claims of its own citizens. Equal treatment of foreigners by the national enforcement agent elicits the expectation that contracts will be uniformily enforced. Over time, foreigners will build up trust in the national enforcement institution and, as a result, be more likely to make contracts. Just as brand names stand for a certain quality of goods, the national enforcement process stands for the probability of compliance by its citizens in international transactions.

Creating a credible national enforcement agency is a public good. Moreover, it is a *pure* public good at the national level because individuals secure no private, personal reward in the case where they are forced to keep contracts with foreigners, or they would have

[5]Vanberg and Buchanan (1988) call this kind of self-enforcing contract "trust rules," because individuals can realize cooperative gains by following rules in dealing with each other. This discussion is an extension of Buchanan's original argument (1975, p. 108) on the public good aspect of obeying laws.

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observed the contract voluntarily. By the imposition of utility losses on defectors, the national enforcement institution brings about the trust that makes all citizens more attractive partners for international exchange.

The public good is national because members of this society are made better off independent of the enforcement structure in foreign countries. Of course, the equal treatment also benefits potential foreign partners. They will certainly prefer to deal with people living in a society that forces them to comply in international exchanges. However, foreigners can be made even better off if they provide the same kind of enforcement structure in their own countries.

All in all, individuals find it in their own self-interest to acquire a reputation for honoring international contracts. There is an incentive for citizens in each nation to create institutions that enforce foreign claims. Therefore, we would expect that the institutional framework for an open world order would emerge spontaneously. The absence of a world government is not a sufficient reason to predict an underproduction of the necessary legal framework for international contracts.

Relaxation of National Constitutional Constraints

Thus far I have focused on the enforcement structure of international contracts. National "protective states," in the sense used by James M. Buchanan (1975), can provide an adequate legal framework for international transactions. Furthermore, the advantage of being attractive partners for international exchange creates an incentive to supply these legal institutions at the national level. However, the use of national collective actions for the benefit of special interests interferes with voluntary international exchanges and erodes the necessary framework for an open world order.

According to Tumlir (1977, p. 14), "The problem of the international order is not an essentially international problem. The difficulty, rather, is that virtually all the core countries are passing at present through a difficult crisis of democratic home governance." Concurrently with the accumulation of governmental economic responsibility (for macroeconomic goals as well as for particular structural results), there has been a relaxation of constitutional constraints on governmental activities.[6]

[6]Two illustrations of this tendency as it relates to written rules are the termination of substantive due process for economic regulation in the United States (see Siegan 1980; Epstein 1985) and the change in the practice of the Swiss Federal Court, namely to start considering "social rights" as a limit of economic freedom. Furthermore, unwritten rules that once served as constraints on the political process, such as adherence to a federally balanced budget, no longer prevail (see Buchanan 1986, pt. 4).

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These institutional changes increased governmental activities, especially on the federal or national level. Whereas the capacity of local governments to tax and to redistribute is limited by competition with each other, that form of competition is less effective among federal governments because exit and entry across nations are very costly. Therefore, federal governments left unconstrained have the proclivity to accumulate regulation and taxation.

The major instruments for federal governments are nationwide taxation and pure in-country regulation on the one hand, and monetary and trade policies on the other hand. Of course, the distinction between regulation and trade policy is arbitrary. (In the following discussion, trade policy is defined as those kinds of taxation and regulation that affect transactions between domestic persons and foreigners in a discriminating way.)

The reason to distinguish between in-country policies and trade policies is that the political exchange processes from which they emerge are different. Winners and losers of pure in-country policies belong to the same jurisdiction and have the same participation rights. In contrast, governmental interventions in the realms of trade and monetary policy have spillover effects to foreign individuals. Foreigners, however, have a relative disadvantage with respect to influencing the domestic political process: They do not have the right to vote. They can only contribute to campaigns and support domestic lobby groups. Therefore, as long as trade regulations and pure in-country regulations are close substitutes, a vote-maximizing regulator will prefer those programs that export part of the costs to foreigners.[7] Consequently, a biased structure of regulation toward interventions at the border can be expected.

Through this structural bias, monetary as well as trade policy is affected. Interfering with convertibility and influencing the exchange rate are some policy options for governments in the realm of monetary policy. The major advantage of trade policies, however, is that they allow governments to discriminate against specific groups.

The pattern of trade regulation is analyzed in the literature on the political economy of protectionism.[8] Informational asymmetries, high transaction costs for organizing broad interest groups, and the institutional design for political representation of regional constituencies

[7]A similar argument is made by Maloney, McCormick, and Tollison (1984) in the context of regulation of export production given an inelastic foreign demand.

[8]Surveys of this literature from a theoretical perspective can be found in Baldwin (1982) and Frey (1984, ch. 2). A review of recent models is given by Ursprung (1987). Empirical results are summarized and discussed in Anderson and Baldwin (1981), Lavergne (1983), and Frey (1984, chap. 3).

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are some of the factors that contribute to a biased structure of trade policy. The wealth effect of trade measures on protected industries (capital owners, management, and workers) is highly visible, is concentrated, and can be defended against potential entrants by sophisticated regulation. Although the political institutions, within which protection is granted, vary among different countries, econometric evidence indicates that concentrated declining industries with a large number of low-wage employees get more protection than other groups.[9] Because of the difficulties in organizing consumer interests, producers of consumer goods are especially successful.

The main contribution of this literature is that trade policy can be explained as a struggle between interest groups *within* nations. Or as Ludger Schuknecht (1989) puts it, in a game theoretic framework protection results from an *intra*national prisoner's dilemma and not from divergent "interests of countries," however defined. Trade policy instruments are major means for interest groups to extract rents from other domestic groups.[10] This redistributive rent seeking creates spillover effects on foreigners—mainly as an unintended consequence of the domestic struggle.

The use of trade policy for redistribution within nations renders international transactions difficult. The erection of entry barriers for large markets causes individuals to give up their self-chosen specialization. Furthermore, the threat of protection creates a genuine uncertainty regarding access to major markets. In such a situation, long-term commitments through investment and specialization become more risky.

Contribution of International Policy Commitments to an Open World Order

Constitutional Function of International Agreements

In a world with domestically unconstrained or inadequately constrained governments, international agreements can have an important function. Such agreements can be understood as a *set of policy commitments exchanged among governments*. Some of these provisions have the character of general rules. They are largely in a negative mode and seek to suppress certain national policies that have

[9]See Anderson and Baldwin (1981), Marvel and Ray (1983), and Ray and Marvel (1984).
[10]See Rowley and Tollison (1986) for a rent-seeking approach to protection. The Australian "transparency" literature (e.g., Laird and Sampson 1987) has been arguing for a long time that trade policy is part of domestic rather than international politics.

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large spillover effects on other countries.[11] If these international rules are properly enforced, they impose restraints on the domestic political process. In that case, international agreements reduce the risk of governmental interventions in international private transactions and, thus, contribute to an open world order. The following analysis of the function of international agreements proceeds on the presumption that such agreements are enforced. The issue of enforcement is discussed in the following subsection.

Because domestic trade policies create spillover effects on other countries, conflicts among governments arise. International agreements are one way to reduce these externalities and, hence, to avoid conflicts. Different kinds of international rules are possible. A national-treatment commitment is an obligation to treat foreign goods the same way as domestic goods. This rule corresponds to complete free trade because no discrimination between nationally produced and imported goods is allowed. The principle of nondiscrimination (or most-favored-nation clause) is a weaker commitment. It requires that a government does not discriminate between foreign suppliers. To put it differently, a government promises that it will extend the favored treatment of any third country to all other participating countries.

The existing international trade agreement, the General Agreement on Tariffs and Trade (GATT), includes the principle of nondiscrimination together with the provision that a bound tariff is the only permitted instrument for protection.[12] The principle of nondiscrimination still allows individuals to buy from the cheapest foreign source, as long as tariffs are nonprohibitive. Although the GATT prohibits quantitative restrictions, the principle of nondiscrimination itself makes it politically difficult to erect quantitative trade barriers. The only way not to violate this rule would be by auctioning off quotas. Furthermore, this procedure would have to be repeated regularly to reflect changes in the comparative advantages of foreign suppliers. As such, the amount of protection is highly visible and, therefore, politically more costly for rent-seeking industries. Government's ability to respond to protectionist pressure is further reduced by the GATT requirement of a bound tariff. A bound tariff is an unattractive instrument for protection-seeking industries. Once the initial rent is consumed, the industries are again exposed to changes in world prices.

[11]The purpose of the negative ordinance is emphasized by Tumlir, for example, (1977, p. 7, and 1985, p. 10).

[12]GATT (1986), Articles I and XI.

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International trade rules can limit the range of domestic collective choices. If effectively enforced, these rules change the outcome of the domestic political process. They contribute to an international order if the overall level of interventions in international transactions can be reduced and if internationally compatible instruments are chosen. In this sense, international agreements have a function similar to national constitutional rules. They provide a framework of self-imposed restraints on policy options that reduce government's discretion to intervene in private affairs. Therefore, international commitments can reinforce the constitutional protection of property rights within each nation. The restricted ability of governments to interfere in international exchange strengthens the property rights of consumers and importers. Both groups can buy to a larger extent from their individually preferred suppliers. In the words of Tumlir (1983b, p. 80), "The international economic order can be seen as the second line of national constitutional entrenchment."

Enforcement as a Major Weakness of International Constraints

The main problem with international policy constraints is their enforcement. Institutional devices have to be developed that sanction those governments that violate the rules.

One possibility is a horizontal system in which countries that are harmed by foreign policies retaliate by imposing sanctions on defaulting governments. For example, the GATT allows the erection of roughly equivalent barriers against imports from offending countries.[13] Some authors (e.g., Dixit 1987 and Richardson 1986) favor the strategic use of retaliation in trade policy, and recommend Robert Axelrod's (1984) "tit for tat" strategy. A country should start with a free trade policy, but as soon as other countries erect barriers to trade, it should retaliate with certainty. At the same time, the retaliating country should send out credible signals that it will restore free trade as soon as the other countries abandon their protective measures.

To be consistent, the reliability of retaliation as an enforcement device for international rules has to be considered from the payoff structure confronting the involved governments. For governments that try to maximize political support, retaliation is not an attractive instrument. It requires interference with international transactions in response to interventions by foreign governments. In the first stage, the retaliating government harms its own citizens, in addition to those already negatively affected by trade policies of foreign countries. Even in a successful case, sanctions will be taken only if

[13]GATT (1986), Article XXIII.

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the retaliating government gains more political support from removing foreign restrictions than it loses from the harm it imposes temporarily on domestic groups.

A successful sanction depends on the ability of the retaliating government to harm a politically important group in the country with the rule-violating government. Given this presupposition, retaliation is only an effective instrument for large countries. In addition, there is the inherent danger that retaliation is just an excuse for granting protection to politically important domestic groups. Therefore, retaliation is an unreliable enforcement mechanism for international agreements and, furthermore, is likely to increase instability. Nobody knows what international transactions may be subject to retaliating measures.

A more promising strategy for the enforcement of international agreements is their introduction into national law, as suggested by Tumlir (1983b, p. 82): "One can imagine the international economic policy commitments of a government to be undertaken in the form of self-executing or directly effective treaty provisions, creating immediate private rights enforceable against one's own government. . . . These rights would be enforceable in national courts only, with no sacrifice of legal sovereignty." According to this proposal, individuals would get direct access to existing domestic procedures for judicial review by national courts.

In the realm of trade policy, the basic principle of international trade commitments can be introduced into national law, like the national-treatment requirement or the principle of nondiscrimination. Of course, this approach is difficult to realize as soon as international agreements develop into complex regulations, leaving open a large range for discretionary interpretation.

The use of domestic institutions for the enforcement of international commitments can be effective in maintaining an international order, because its erosion is mainly caused by domestic political struggles. In the case of protectionism, the direct access to national courts by those individuals harmed by domestic trade policies strengthens their positions and helps to correct the asymmetries in the political process.

Emergence of International Policy Commitments

A fundamental question remains: How is it possible that international policy commitments emerge, and why can such restraints not be imposed unilaterally?

The traditional argument is that international rules reduce spillover effects of national policies and, therefore, are more effective

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than unilateral commitments. However, the public choice perspective offers a further argument.[14] The international dimension creates *new coalitions in the domestic political process.* Obvious examples are international trade negotiations. A multilateral move toward freer trade will find support from export-oriented industries that want access to new markets. In such a context, the producers interested in protection encounter the producers interested in export expansion. Such a multilateral trade liberalization on a reciprocal basis confronts different producer interests in the domestic political process. From this point of view, reciprocity in trade negotiation is not a mercantilistic concept; it is essential for overcoming the asymmetric, producer-biased structure of interest groups within nations. Domestic reforms and deregulation may get easier to implement with the support of export-oriented interest groups generated by simultaneous deregulation of foreign markets.

From this perspective, international trade negotiations can be understood as an *exchange of domestic political support among governments.* To reduce trade barriers, a government needs policy commitments by other governments that create enough political support within the first government's constituency to implement the step toward trade liberalization. The agenda of a multilateral trade negotiation is an important prerequisite for a successful outcome. The issues have to be bundled in such a way as to achieve political support in the most important trading nations. In addition, (temporary) subsidies for the losers may be necessary to produce enough domestic support for the results of international trade agreements.[15]

Conclusion

In this paper, I have argued that international order is merely a reflection of national constitutional orders. The domestic enforcement institutions have a two-fold task: first, to provide the legal framework for international contracts and second, to enforce the multilaterally chosen limits on domestic collective activities.

A constitutional perspective offers a fruitful approach for a positive analysis of existing international arrangements, such as the GATT. The question to ask is: To what extent and in which respects do

[14]See Roessler (1978) and Hauser (1986, p. 20).

[15]This point needs more precise modeling than is possible in this paper. Especially, one should elaborate on the benefits for national politicians from constraining their discretion. The skeptical view, put forward by Vaubel (1986), is well founded. Whereas he explains the behavior of international bureaucratic organizations, I focus on international policy commitments in the form of general and durable rules.

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existing international agreements restrain domestic policymakers? Or, to put it differently, how do international agreements strengthen the national constitution of economic policy? Of course, such an analysis has to be based on a comparative assessment of the working properties of alternative arrangements.

To achieve an open world order the international route may be a promising strategy, as the public choice perspective suggests. Political entrepreneurs could use international arrangements to implement more rule-oriented domestic policies and, at the same time, contribute to a more open world order.

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The Effect of Disinflationary Policies on Monetary Velocity

William T. Gavin and William G. Dewald

The U.S. economy in the 1980s saw a decline in the trend growth rate of monetary velocity, the ratio of nominal GNP to the money supply. This unexpected development was reflected in the systematic overprediction of inflation and nominal GNP growth by econometric models and economic forecasters. Robert Lucas (1976) showed that econometric models would err when simulating policy alternatives or when forecasting over a horizon in which policy had changed.

Was the recent decline in monetary velocity the result of deregulation or disinflation? Studies of this issue have found little effect from the disinflation policy. These studies have focused on U.S. data from 1959 to the 1980s. Robert Rasche (1987, 1988) and V. Vance Roley (1985) find that including inflation or inflation expectations as explanatory variables does not pick up the changes in velocity that occurred in the early 1980s. Both authors attribute the shift in velocity to deregulation, because the shift is explained by dummy variables entered for periods of regulatory change. The problem, of course, is that the disinflation policy and the deregulation occurred over the same period.

William Poole (1988) argues that including long-term interest rates in a standard log-linear, money-demand function tends to capture the effect of changing inflation trends. These equations, however, also made large errors in forecasting money demand in the 1980s. But perhaps we should not be convinced by the standard regression results. It does not seem appropriate to use short-term movements

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in money growth, inflation, or long-term interest rates as a proxy for the disinflation policy. Disinflation policies are irregular events; indeed, the entire period for which the Federal Reserve maintains consistent data for the monetary aggregates, 1959:Q1 to the present, contains few episodes that might be accurately portrayed as including a disinflation policy.

In this paper we consider the effect of disinflation policies on the velocity relationship by examining the experience in the United States back to 1907 and the recent experience—the past 30 years—in a group of 39 countries. Our results show a systematic relation between unexpected changes in the money-income relationship and changes in the trends of inflation rates. By our calculations, a policy that reduced average inflation by 10 percentage points from one business cycle to the next would be associated with an average 3 to 5 percentage-point reduction in velocity growth trends. This effect is somewhat smaller than the U.S. record for the 1980s, especially for M1. We do not offer these results as a method for adjusting monetary targets during a disinflation; rather, our results offer further evidence that the failure to commit to a stable price policy tends to destabilize the economy.

Why Should Disinflation Policies Lead to Lower Velocity Growth?

People hold money to reduce transaction costs. The opportunity cost of holding money is the real interest foregone from not holding bonds and the depreciation of the value of cash holdings because of inflation. At the margin, people will want to hold more money relative to their income and expenditures when the cost of holding money falls. Therefore, when inflation declines, we expect velocity (the ratio of income to money) to fall.

The dynamics of this process become complex when we introduce forward-looking expectations. Consider the conventional log-linear, money-demand function. When we combine this money-demand model with a money-supply policy and solve for the inflation rate, we find that inflation today is a function of expected future money growth.[1] Any discrete change in the expected trend in money growth will lead to a discrete change in the level of money demand. So, while changes in the trend growth rate of the money supply lead to equal changes in the trend inflation rate, there will be a temporary

[1]See Cagan (1956), Friedman (1969), and Sargent (1986) for further discussions of this model of money demand.

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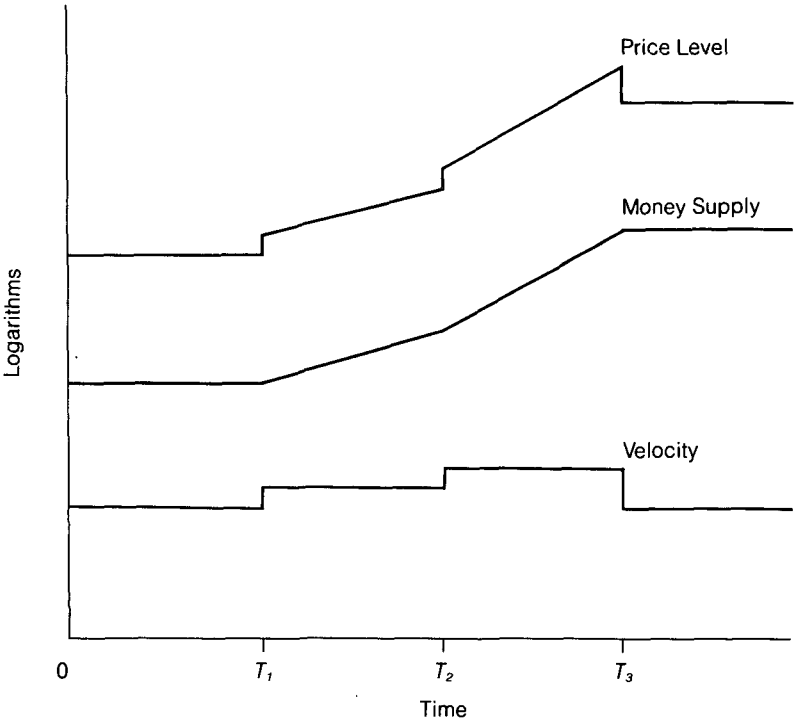
period of negative correlation between money growth and inflation resulting from the one-time shift in money demand.

Assume for simplicity that real income and transaction technologies are fixed. If the central bank had a policy of stable inflation (zero or some other constant rate), the money-growth rate would equal the inflation rate. Expectations of inflation would not change from period to period, and the implied velocity trend growth would be zero. If the central bank had a policy of increasing the inflation rate at a constant acceleration rate each period, then inflation expectations would be rising at a constant rate, money growth would be less than the inflation rate, and velocity would grow at a constant rate.

A discrete shift in the level of velocity occurs whenever there is a change from one rate of money growth to another. In Figure 1 we illustrate a hypothetical economy showing the effect of abrupt changes

FIGURE 1

VELOCITY SHIFTS DUE TO POLICY CHANGES



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in the money-growth trend under the assumption that the public expects the current money-growth trend to be permanent.

The period from *0* to T_1 represents a steady state with zero inflation. The money-growth rate is zero, inflation is zero, and velocity is constant, as shown in the bottom panel of Figure 1. At T_1 the equilibrium money-growth rate is raised to 5 percent. The price level and velocity jump to a new level; inflation rises from 0 to 5 percent, but velocity growth is still zero. At T_2 the monetary authority surprises the public again with an increase in the money-growth trend to 10 percent—and the price level and velocity jump again. At T_3 an abrupt disinflation policy is adopted. The money-growth trend is lowered to the original level.

Of course, it is inappropriate to expect people to be completely surprised by current or future changes in the course of policy. In the real world we anticipate some policy changes and perhaps a period of learning after policy changes are made. Changes in prices may lead or lag the actual implementation of a disinflation policy. A longer lag is more likely when the monetary authority lacks credibility. While no one expects the economy to behave in the stylistic fashion depicted in Figure 1, the figure captures the essence of a process we think has been at work in the United States since World War II.

The Framework for Analyzing the Effects of Disinflation on Velocity

The velocity relationship has been measured in various ways. Many people have used a leading velocity concept because changes in money tend to lead changes in income. In this paper we use the following version of the St. Louis equation to define the velocity relation:[2]

$$\Delta ln(GNP)_t = c + \sum_{j=0}^{n} b_j \, \Delta ln(M)_{t-j} + e_t, \qquad (1)$$

where

GNP = nominal gross national product,
M = money stock defined alternatively as the monetary base, M1 and M2,
e = error term, where $e_t \sim iid\ N(0,\sigma^2)$.

We will examine the out-of-sample forecast errors from this equation and their relation to changes in the expected monetary-growth trend.

[2]This equation is in the tradition of the St. Louis equation that was introduced by Andersen and Jordan (1968).

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Consider the form of the velocity process implied by the St. Louis equation:

$$\Delta v_t = -\Delta ln(M)_t + c + \sum_{j=0}^{n} b_j \Delta ln(M)_{t-j} + e_t, \qquad (2)$$

where

$$v_t = ln(GNP/M)_t.$$

This equation implies that the velocity growth trend is equal to a constant plus a proportion $(\Sigma b_j - 1)$ of the money-growth trend. This equation can work well in a wide variety of economic structures as long as the process generating the money supply is well behaved. If there are no abrupt changes in the trend of money growth, then a weighted sum of past money growth may be a good predictor of future money growth. However, this equation will err when used to predict nominal GNP growth in the presence of a change in policy. The error will be largest in the near term and will gradually disappear as the forecast horizon is lengthened.

One implication of this finding is that an empirical researcher estimating the St. Louis equation—or some other simple expression of the quantity theory—will want to choose a time period that excludes abrupt changes in the trend money-growth rate. Periods of abrupt policy changes will be avoided because they include the transitory periods when prices and money will not be moving together. For example, we find that most studies of the St. Louis equation omit the Korean War experience. One might think of the U.S. experience from 1955 to the present as being depicted in Figure 1. Between 1955 and 1980, the trend of inflation and money growth steadily increased (as illustrated in Figure 1 from period 0 to T_3). In the early 1980s, the trend of inflation was reversed.

Of course, the illustration is not exact. Rather than a decline in the price level, there was a jump in the money supply (spread over several years). Nevertheless, the effect on velocity is the same (see the bottom panel of Figure 1). The jump in the money supply should be expected because the Federal Reserve does not have ultimate goals for the money stock. Rather, goals are formulated in terms of prices and income. Monetary targets are used as intermediate targets to achieve those goals. If the public and the Federal Reserve expect a one-time increase in real money demand following the implementation of a disinflation policy, then the Fed would be expected to accommodate this demand shift with an equal shift in the money supply to maintain a given path for income and prices. In practice, because the Fed uses the federal funds rate as an operating instru-

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ment, the Fed tends to accommodate shifts in nominal money demand automatically.

Therefore, the expectation that there will be a reduction in the monetary growth trend over the long run will be accompanied by a decline in the inflation rate and a temporary increase in the observed money stock. Ideally, we would like to measure the excess of money supply over real money demand. In the absence of a well-defined measure of real money demand, we use the average inflation rate over an extended period as a measure of the expected trend in money-supply growth.

Experience in the United States: 1907 to 1987

We will use historical data for money and nominal income starting in 1907:Q3 to examine the forecasting error of the St. Louis equation. We want to see whether equation 1 systematically overpredicted nominal GNP growth in periods when there was a decline in the trend inflation rate and whether it underpredicted nominal GNP growth when there was an increase in the trend inflation rate. Under the assumptions implied by this equation, there should be no systematic correlation between the forecast errors and the change in the average inflation rates. We examined this proposition under three alternative definitions of money: the monetary base, M1, and M2.[3] Equation 1 was estimated for a series of samples that included three consecutive business cycles as measured from trough to trough. Equations estimated separately for each aggregate in each sample were used to forecast nominal GNP growth in the next cycle.

We began by estimating this model for the period 1908:Q4 to 1919:Q1. Each estimated equation was then used with actual mon-

[3]The data used in this study come from a variety of sources:

(a) M1 and M2: May 1907 to December 1958 from Friedman and Schwartz (1963); and January 1959 to March 1987 from the Board of Governors of the Federal Reserve System. Values for M1 were semiannual until June 1914.

(b) Monetary base: May 1907 to December 1918 from Friedman and Schwartz (1963); and January 1919 to March 1987 from the Federal Reserve Bank of St. Louis, adjusted for changes in reserve requirements but not seasonally adjusted. The Census X-11 program in SAS was used to seasonally adjust this monthly series, which was then used to get quarterly averages. Data series from different sources that were used in statistical analysis were spliced by transforming the early series to growth rates and computing revised level series based on the actual level of the most recent series.

(c) Commercial paper rate: Board of Governors of the Federal Reserve System. The early values for this interest rate are published in *Banking and Monetary Statistics*, and recent values are published in the *Federal Reserve Bulletin*. Quarterly data were computed as the average of monthly values.

(d) GNP and GNP deflator: 1907:Q2 to 1947:Q4 from Gordon (1982); and 1948:Q4 to 1987:Q1 from the Bureau of Economic Analysis.

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etary data to predict nominal GNP growth over the course of the next business cycle. The equations were updated seriatim by adding the data from the forecast cycle and dropping the data from the first cycle. This procedure was followed through the last forecast interval, 1983:Q1 to 1987:Q1, which is not a full cycle. Overall, there are 15 forecast intervals for the base and M2. There are only 13 forecast intervals for M1 because of the lack of quarterly information about the split between demand and time deposits before 1914:Q3.

The first three columns in Table 1 list the estimated standard errors for each aggregate in each of the overlapping estimation periods. The standard regression errors for all equations reflect the pattern of variance in GNP growth. After World War II, there was a large decline in the variance of GNP growth and in the standard error of the forecasting equations. Averages for the entire sample for the periods before and after 1945 are shown at the bottom of each table. M2 has the lowest standard error on average for the entire sample, and M1 has the lowest standard error in the postwar era.

TABLE 1

IN-SAMPLE STATISTICS

Estimation Period	Estimated Standard Errors			Adjusted R-Squared		
	Base	M1	M2	Base	M1	M2
08:4–19:1	12.97	—	12.16	0.17	—	0.27
12:2–21:3	16.58	—	15.83	0.28	—	0.34
15:1–24:3	17.74	17.02	17.61	0.25	0.31	0.26
19:2–27:4	15.37	13.92	13.47	0.20	0.34	0.39
21:4–33.1	17.82	12.51	11.41	−0.01	0.50	0.59
24:4–38:2	20.50	17.96	15.63	0.05	0.27	0.45
28:1–45:4	21.54	18.04	17.40	0.00	0.30	0.35
33:2–49.4	16.93	16.28	15.75	−0.01	0.07	0.13
38:3–54:2	12.37	10.79	11.67	0.00	0.24	0.11
46:1–58:2	7.14	5.87	6.69	−0.03	0.30	0.10
50:1–61:1	6.46	5.38	6.59	0.00	0.31	−0.04
54:3–70:4	3.95	3.33	3.65	0.03	0.31	0.17
58:3–75:1	3.69	3.28	3.48	0.08	0.27	0.18
61:2–80:3	3.56	3.22	3.52	0.13	0.29	0.15
71:1–82:4	4.44	4.30	4.64	0.11	0.16	0.03
Average	6.00	12.07	10.15	0.08	0.28	0.23
Pre-1946	17.50	15.89	14.79	0.13	0.35	0.38
Postwar	4.88	4.23	4.76	0.05	0.28	0.10

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Adjusted R-squares are also reported in Table 1.[4] M1 yields the most consistent in-sample explanation of nominal GNP growth. The results for the other aggregates vary over time. The monetary base never explains much of the in-sample variation of nominal GNP growth.

The out-of-sample statistics (shown in Table 2) should confirm the results of the in-sample statistics if the forecasting model is stable over time. The root mean square errors (RMSEs) reflect a common problem in economic forecasting. The specification that works best in any particular sample does not always work best in the next period. In our case, M1 had the most explanatory power in-sample, but M2 produced the best out-of-sample forecasts. If we consider only the subsample for which M1 quarterly data were available, the RMSEs for M2 were lowest on average. The average for M2 is 9.15 percent at annual rates for the periods from 1924 to 1987. M1 did better than M2 in the 1950s and the 1970s. M1 has done so poorly in the 1980s that it does worse on average than the monetary base over the entire postwar period, even though it performed better than the base for the 30 years before 1980.[5]

While the absolute size of variation in velocity was much higher before World War II, the perception that there was a large increase in uncertainty about velocity in the 1980s is due to the relative increase in the forecast errors. There were only two business cycles in which one could uniformly reject the hypothesis that the forecast errors (for all definitions of velocity) were generated by the same model used to make the forecast. Those cycles were from 1933:Q2 to 1938:Q2 and from 1980:Q4 to 1982:Q4. Even though velocity was more variable in some earlier periods, the relative uncertainty about quarterly movements in velocity was as high in the early 1980s as it has ever been.

[4]While the explanatory power of this forecasting model is quite low in an absolute sense, there was not a significant amount of serial correlation in the error term for the cases before 1927 or after 1950. While this is a very naive forecasting model, it does about as well in recent years as more elaborate models. For example, Karamouzis and Lombra (1988) report that the RMSE of the Fedeal Reserve staff's quarterly nominal GNP forecast was 4.2 percent at an annual rate for the period between 1973:Q1 and 1982:Q4. This figure is somewhat greater than the RMSEs from the M1 equation, but about the same as the RMSEs for the other aggregates during this period.

[5]The relatively poor performance of M1 is probably due to the relaxation of the prohibition against paying interest on checkable accounts. See Rasche (1988) for an argument that all of the increase in uncertainty about velocity is due to deregulation. Using M1A in place of M1 in the 1980s does not help overall. The error using M1A was very large in the 1980:Q4 to 1982:Q4 cycle and offsets some improvement in the recent cycle. For a discussion of M1A and its usefulness as an indicator and target of policy, see Darby, Mascaro, and Marlow (1987) and Gavin and Pakko (1987).

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TABLE 2

OUT-OF-SAMPLE STATISTICS

Forecast Horizon	Root Mean Square Errors			Cycle-Average Forecast Errors		
	Base	M1	M2	Base	M1	M2
19:2–21:3	22.03[a]	—	20.23[a]	−2.49	—	−9.93[a]
21:4–24:3	15.75	—	15.85	3.32	—	3.23
24:4–27:4	7.94	10.29	9.55	0.25	1.77	0.05
28:1–33:1	29.90[a]	15.14	13.62	−18.66[a]	−5.90[b]	0.97
33:2–38:2	36.08[a]	28.07[a]	26.33[a]	20.17	−1.77	5.28[a]
38:3–45:4	20.80	17.48	18.46[b]	2.55	−6.64[a]	−0.12
46:1–49:4	9.31	11.12	8.83	6.34	8.81[b]	4.67
50:1–54:2	7.93	6.99	7.75	−1.22	0.24	−1.34
54:3–58:2	6.46	4.36	6.09	−4.35	−0.45	−2.90
58:3–61:1	5.42	5.43	5.88	−1.28	0.33	−3.02
61:2–70:4	3.62	4.42	2.99	1.44	−2.00[a]	0.62
71:1–75:1	3.99	3.73	4.13	0.42	0.28	−0.07
75:2–80:3	4.36	3.74	4.47	1.56[a]	1.15[b]	1.56[a]
80:4–82:4	6.68[a]	7.62[a]	6.48[a]	−1.60	−2.60[a]	−1.73
83:1–87:1	4.29	8.55[a]	4.29	−3.46[a]	−6.61[a]	−2.26[a]
Average	12.30	9.77	10.33	0.20	−1.03	−0.33
Pre-1946	22.08	17.74	17.34	0.86	−3.13	−0.09
Postwar	5.78	6.22	5.66	−0.24	−0.09	−0.50

[a]Indicates that the root mean squared error is significantly greater than the estimated standard error of the forecast equation or the forecast error is different from zero at the 5 percent critical level.

[b]Indicates that the root mean squared error is significantly greater than the estimated standard error of the forecast equation or the forecast error is different from zero at the 10 percent critical level.

Cycle-average forecast errors are shown on the right side of Table 2. There were very large average forecast errors before 1946, although these errors were not large relative to the standard error of the forecasting equations. The forecasts were relatively unbiased after 1946 except in the 1946–49 business cycle and in the most recent period (1983–87). The large bias in the forecast using M1 in the most recent cycle is one source of current disenchantment with monetary targeting. Tests show several significant errors in the forecast of the velocity growth trend scattered throughout the 80-year period. We see that in recent years there was a significant underprediction of the GNP growth trend for all aggregates for the period 1975:Q2 to 1980:Q3. This underprediction was followed by a significant overprediction of GNP growth trends in the 1980s.

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To what extent are these large errors associated with changes in monetary policy? To answer this question, we regressed the mean forecast error on the change in the average inflation rate for the most recent cycle in the estimation period to the average in the forecast cycle. Under the hypothesis of our regression model, the mean forecast error is distributed normally with zero mean and variance equal to the estimated variance of the error in the regression equation divided by the square root of the number of quarters in the forecast interval.

We assume that the expected variances of the forecast errors for each cycle are equal to the estimated variance of the error in the forecasting equations. Since these expected variances differ so much over the past 80 years, we cannot assume that the errors will be homoscedastic. While an ordinary least squares (OLS) regression of the mean forecast error on other variables will result in unbiased estimates of the slope parameters, it may yield inefficient estimates of the variances of the parameter estimates and incorrect t-statistics. To avoid this problem, we weighted the mean forecast errors and the righthand-side variables by the reciprocal of the expected standard deviation of the mean forecast error; then we used OLS on the weighted variables.

Results in Table 3 show that changes in the inflation trend were positively related to the cycle-average forecast error. As expected, a disinflation policy raised the demand for real balances and lowered the velocity growth rate.

TABLE 3

AVERAGE FORECAST ERRORS AND CHANGES IN ECONOMIC TRENDS: U.S. EXPERIENCE

	St. Louis Base		M1		M2	
Constant	−0.07	(−0.04)	−0.01	(−0.52)	0.13	(−0.11)
Change in Average Inflation Rate	0.72	(2.88)	0.49	(1.97)	0.39	(2.62)
R-Squared	0.39		0.26		0.35	
No. of Observations	15		13		15	
Degrees of Freedom	13		11		13	

NOTE: Weighted least squares were used to calculate the statistics in Table 3; t - statistics are shown in parentheses.

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Cross-Country Evidence: 1957 to 1985

Further evidence is presented from a cross-sectional study of 39 countries. For each country, we compare the out-of-sample forecasting errors of equation 1 in the 1980s to the change in the expected money-supply-growth trend. As was the case for the United States, we find that the St. Louis equation systematically overpredicts nominal GNP growth following a reduction in the expected money-supply-growth trend and systematically underpredicts nominal GNP growth following an increase in the expected money-supply-growth trend.

The cross-country data come from the International Financial Statistics tape compiled by the International Monetary Fund.[6] Because quarterly GNP data are relatively scarce, we have used annual data through 1979 to estimate the country models. The equation included the contemporaneous value and a one-year lag of M1 growth. We used quarterly Consumer Price Index (CPI) data, however, to measure inflation trends in each country. In general, GNP data are measured with substantial error, especially in some of the less-developed countries. It seems that the CPI is one of the most carefully constructed economic indexes. By using the CPI to measure the change in the inflation trend, we reduce the possibility that our results are due to measurement error in the construction of the GNP deflator.

Our forecasting equation should underpredict GNP growth for those countries that have had an increase in the inflation trend and should overpredict GNP growth for those countries that have had a decline in the inflation trend. Table 4 lists the countries included in the sample and the beginning and end of sample data for each country. Also listed are summary statistics for each country used in the forecasting experiment. In order, we list unadjusted R-squared for the forecasting equation estimated through 1979, the mean forecast error for the 1980s, and the change in the inflation trend (measured as the average quarterly growth rate of the CPI in the 1980s minus the quarterly average growth rate from 1973:Q2 through 1979:Q4). In the early 1980s 22 countries had lower inflation trends than they had in the 1970s, and 17 had higher trends. The correlation between forecast errors and the change in the inflation trend is shown in Table 5. We regress the mean forecast errors for each country on the change

[6]We started with the 46 countries included in the study by Kormendi and Meguire (1984). Our data come from a more recent tape supplied by the International Monetary Fund. Taiwan was eliminated from the tape by the IMF. We eliminated 6 other countries that had less than 21 annual observations, so we were left with 39 countries in our data set.

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TABLE 4

THE CROSS-COUNTRY SAMPLE

Country	Sample Period	Unadjusted R-Squared	Average Forecast Error	Change in Inflation
Australia	1957–84	0.63	−0.49	−3.42
Austria	1957–84	0.29	−0.29	−1.18
Belgium	1957–84	0.28	−0.81	−1.00
Bolivia	1962–83	0.39	20.96	105.72
Brazil	1963–84	0.47	25.51	54.98
Canada	1957–84	0.08	−0.09	−1.43
Colombia	1957–84	0.52	1.24	−0.35
Denmark	1957–84	0.17	−2.35	−2.67
Dominican Rep.	1957–83	0.22	0.22	3.02
Ecuador	1957–84	0.73	4.86	9.12
El Salvador	1957–85	0.78	−0.62	1.51
Finland	1957–84	0.41	−0.26	−3.45
France	1957–84	0.06	0.19	−0.31
Greece	1957–84	0.38	4.52	3.07
Guatemala	1957–83	0.70	0.35	−3.70
Honduras	1962–85	0.58	−1.07	−0.47
Iceland	1957–84	0.83	−3.81	5.22
Ireland	1957–82	0.51	6.30	2.60
Italy	1957–84	0.25	5.18	−1.41
Japan	1957–84	0.31	−2.48	−6.46
Mexico	1957–84	0.76	12.39	27.22
Netherlands	1957–85	0.35	−3.58	−2.61
New Zealand	1957–82	0.40	2.66	−1.19
Norway	1957–84	0.52	1.70	0.94
Paraguay	1957–84	0.55	5.97	−0.02
Peru	1960–84	0.46	9.94	35.75
Philippines	1957–84	0.62	4.90	4.27
Portugal	1957–82	0.46	1.23	−0.12
South Africa	1957–84	0.55	−6.50	1.90
Spain	1957–84	0.63	2.98	−4.51
Sri Lanka	1957–84	0.41	6.01	5.12
Sweden	1960–82	0.29	−0.48	0.25
Switzerland	1957–84	0.34	0.74	−0.07
Thailand	1957–84	0.65	−0.28	−3.89
Turkey	1962–83	0.85	1.88	9.10
United Kingdom	1957–84	0.70	−3.42	−6.40
United States	1957–84	0.69	−2.32	−2.34
Venezuela	1957–84	0.22	−0.63	2.12
West Germany	1957–85	0.26	−1.11	−0.65

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TABLE 5

AVERAGE FORECAST ERRORS AND CHANGES IN ECONOMIC TRENDS: FOREIGN EXPERIENCE USING M1

	39 Countries	Excluding Outliers
Constant	0.81	0.58
Change in Average Inflation Rate	0.26 (9.04)	0.33 (2.42)
R-Squared	0.69	0.15
No. of Observations	39	35
Degrees of Freedom	37	33

in the inflation trend. The errors of the St. Louis model are clearly correlated with the change in the inflation trends.

Figure 2 shows the scatter diagram of the average forecast error for each country plotted against the change in the inflation trend. Four outliers have very high inflation rates and very large changes in the inflation trend: Bolivia, Brazil, Mexico, and Peru. We reproduce the regression results excluding these countries. The results, also shown in Table 5, confirm our conclusions for countries with small to moderate changes in inflation, as well as for countries that end hyperinflations.

Conclusion

Evidence from 80 years of U.S. experience and a 30-year cross section of 39 countries shows that the velocity relation embodied in the St. Louis equation was systematically affected by disinflation (and inflation) policies. Velocity typically declines relative to trend when disinflation policies are adopted. This result is predicted by traditional money-demand theory with forward-looking expectations.

For the experience covered by our data, a policy that reduced average inflation by 10 percentage points from one business cycle to the next would be associated with an average 3 to 5 percentage-point reduction in velocity growth trends. While a disinflation policy is expected to lead to a decline in the velocity growth trend, the size and timing of the decline error is still uncertain. This uncertainty is partly because the parameters of the forecasting equation are likely to change with a policy shift, and partly because central banks do not commit to long-run monetary trends. Even if we knew how the forecasting model would err in the presence of a policy regime shift,

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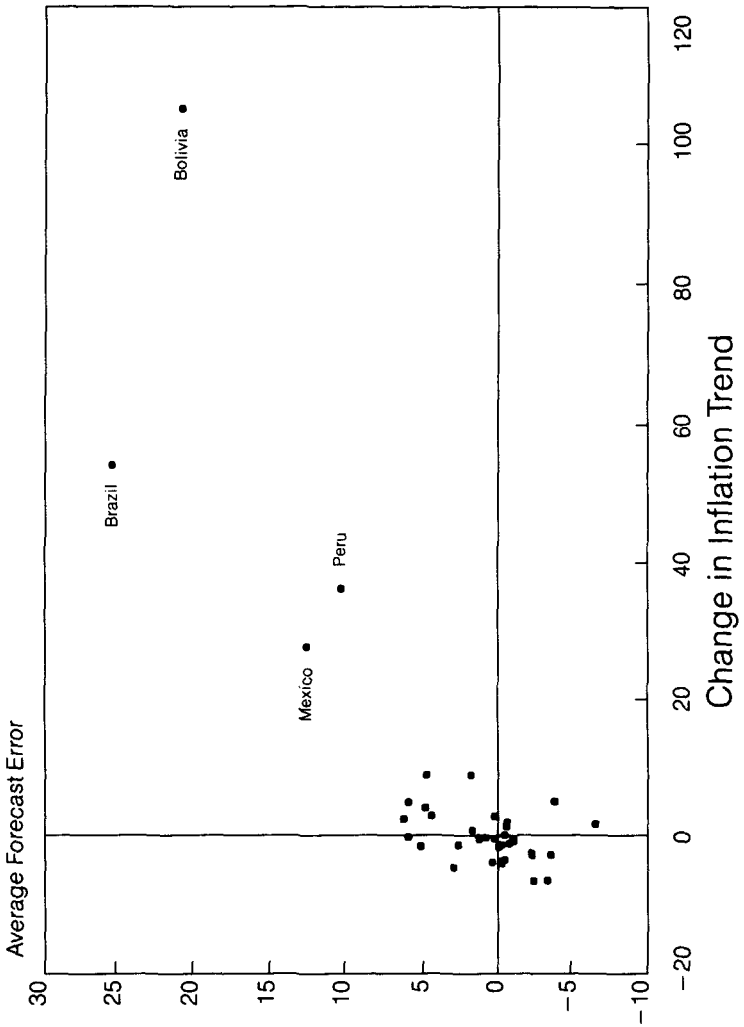
FIGURE 2

AVERAGE FORECAST ERRORS AND CHANGES IN AVERAGE INFLATION



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we could not predict inflation with confidence because we cannot predict future money-supply trends.

One might conclude from our analysis that the Federal Reserve should use nominal GNP or the price level itself as the guide to policy. As in William Haraf (1986), the occurrence of persistent deviations of velocity from trend implies that simple money-growth rules may not be the best way to reduce inflation gradually. Nevertheless, we do not think this is the most important point to be made. Rather, our results show that uncertainty about future policies can destabilize the economy. Policymakers could remove this uncertainty if they were able to commit to a long-run nominal GNP or price-level target: The short-run variability in velocity and money growth could then be safely ignored. Otherwise, the public is left with the difficult task of predicting the future behavior of policymakers.

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The Role of Statistical Heuristics in Public Policy Analysis

Gregory G. Brunk

Since policy prescriptions frequently are contradictory, people commonly suspect that many researchers manipulate their statistical findings to justify preconceived notions. An increasing awareness of divergent policy prescriptions undermines public, professional, and academic confidence in all areas of policy analysis (see Beardsley 1980, Lovell 1983, Diesing 1985, Leamer 1983, McKown 1986, and particularly McAdams 1984). Similar criticisms routinely are leveled against econometric models, many of which are not very reliable, rest on unstated—and sometimes unrecognized—assumptions, and suffer from other serious difficulties (see Cooper 1972, Porter et al. 1981, and Ascher 1982).

Since the behavioral revolution, applied social scientists have put much effort into searching for mechanistic solutions to society's problems. Many thought such solutions would emerge through simple analysis of empirical evidence, and they expected the mechanistic approach to bring a consensus, not dissension, among policy experts. Neither expectation has proven true. As a result of the failure of naive empiricism, statistically minded critics of the current state of public policy analysis face great frustration. We are unable to propose any formula-like solutions to this malaise because many problems that plague policy analysis result from our largely nontheoretical examination of empirical evidence.

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Faced with the current situation, applied policy specialists have developed new warrants to justify their craft. More and more, the experts' divergent policy prescriptions are claimed as a virtue rather than a vexation. Today, policy analysis is often justified on the basis of its potential to clarify opposing positions and to develop sets of feasible alternatives for politicians and bureaucrats. Such a position is ironic since clarification of positions is the traditional virtue of classical political philosophy, and such a defense of policy analysis puts the subfield much closer to social sciences traditionalists than to behavioralists.

This paper has three major purposes: first, to discuss a few commonly encountered sinister explanations for the wide diversity of policy prescriptions; second, to offer an alternative statistical explanation and discuss the very important, but usually overlooked, role that research heuristics play in modeling social processes; and finally, to present the results of an experiment in econometric modeling, in which a series of "well-intentioned" individuals developed a multitude of different models of bank failures for the American Southwest. My arguments suggest that practitioners adopt a different approach to prescriptive analysis—an approach based less on the empirical evidence of single studies and more on principles derived from general theoretical models of behavior that have been verified in previous analyses of related policy areas.

The Traditional Arguments

The sources of divergent policy prescriptions are little understood, but three sinister causes are commonly cited in anecdotal accounts of public policy formation: money, fame, and ideology.

Money

Few of us doubt that the influence of money will be seen in public policy research if analysts think that reaching the "correct" decision will affect their income. "Hired guns" are always available and are willing to offer justifications for almost any conclusion that a powerful politician, interest group, or bureaucrat desires. The problems arising from this process have been intensified by the existence of numerous policy institutes whose research associates must survive from day to day on contract work; these problems multiply when the results from the initial stages of research have an impact on the probability of additional funding.

Fame

A second, seemingly common, source of distortion is subconscious deception caused by a desire to achieve professional attention. His-

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tory is littered with examples of prominent scientists who deceived themselves in their research. One of the most interesting stories concerns Rene Blondlot, the distinguished French physicist, who later won the Nobel Prize. In 1903 he announced the discovery of "N-rays," a new form of radiation that could be diffracted into visible light by passing it through an aluminum prism (Klotz 1980). The observation of N-rays took a particularly well-trained eye, and soon the existence of this new radiation was confirmed by many observers, who took great pride in their acute scientific perception. The fad began with Blondlot's criterion for hiring lab assistants: He employed only those who could "see" N-rays during their job interviews!

Ideology

Ideology is such a clear factor affecting research that occasionally it is possible to predict what prescriptions will be advocated by various individuals in particularly contentious policy areas, such as the efficacy of the death penalty (Leamer 1983). More generally, it seems likely that an individual's attitude toward "big government" plays a role in how one feels about problems caused by policy mistakes. Conservatives and liberals within government differ mostly about policy areas in which government should have a greater role.

Suppose "Star Wars" will not work and the administration's analysis is wrong. How would a commentator, who wants to expand the size of the American military, view such a possibility? The commentator might be more accepting of the consequences of the administration's forecasting mistakes since such errors tend to give the military more funding and power. This error would be dismissed as an evil that has desirable consequences. Such policy mistakes have probably enlarged the size of government, particularly when students of the craft are told they should propose "policy relevant" models.

An Alternative Explanation for Diverse Policy Prescriptions

This paper explores a less-sinister explanation for the many instances in which professionals disagree on what is correct policy. Much effort has been expended in the social sciences to find algorithmic solutions to policy problems (Tamashiro 1984, p. 205), and social scientists have diligently pursued the El Dorado of methodology, hoping to find some statistical procedure for all situations. My argument is that many policy disagreements arise from the heuristics, or rules of thumb, that are used—often unknowingly—by researchers. These

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disagreements are compounded by common data and computational errors (Dewald, Thurdby, and Anderson 1986). The issue of statistical heuristics has received little attention in the scholarly literature and is generally ignored in most statistics and econometrics textbooks, which concentrate on classical hypothesis testing and give readers a false sense of security about statistical results. These heuristics have seen even less attention in the applied literature (Hennessy 1982).

Why has there been so little study of rules of thumb used in practical research situations? Perhaps it is because we think these heuristics are unscientific, but our perception of their role in developing knowledge has changed with the increased attention given to artificial intelligence (for some policy examples, see Tamashiro 1981, 1984; Tamashiro and Brunk 1985).

Many standard research techniques were developed by statisticians, who were interested primarily in the abstract properties of their mathematical discoveries, although some early statisticians, including R. A. Fisher and Karl Pearson, were more applications oriented. While econometricians largely have been interested in the practical characteristics of statistics, they too have confined their research primarily to technical issues like robustness, biasedness, and efficiency. Such studies offer little practical help in assessing the validity and reliability of our collective research efforts. We have almost no evidence concerning how statistics actually are used by practitioners. Because the issue is complex, no one yet has analyzed most of the biases that may be induced by higher-order modeling heuristics (Klitgaard, Dadabhoy, and Litkouchi 1981, p. 103).

Statistical Heuristics

An algorithm is "any procedure that can be carried out in a 'mechanical' fashion (i.e., according to fixed rules) without the great need for intellectual judgment or initiative" (Tamashiro 1984, p. 204). In the social sciences, algorithms often are mathematical formulas that guarantee an optimal solution to a problem when certain conditions are met. Algorithms are the heart of all computer statistics programs. Heuristics, on the other hand, evolve from practical experience in certain types of problem-solving activities and are informed guesses about efficient rules that can be used for problem solving (Tamashiro and Brunk 1985). These two approaches are not total opposites. Depending on the context, an algorithm often can be used as a heuristic. Algorithms are most effective in analyzing well-ordered, well-defined, and well-understood processes, few of which yet exist

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in the social sciences. Heuristics are more useful in less well-charted areas.

The statistical algorithm that is used in stepwise regression guarantees that we will "explain" the most variance for a given number of variables. But maximizing explained variance is never our ultimate goal—rather it is only a means to an end (see King 1986). Instead, social scientists are interested in explaining, understanding, predicting, or controlling social phenomena. Any statistical algorithm is only a *method* that we use in achieving one of these goals. A particular algorithm may, or may not, be of much use to us, and sophisticated researchers treat all algorithms—usually unconsciously—as heuristics.

The nature of the algorithm problem in theory building is easy to demonstrate using stepwise regression. Suppose our goal is to understand a process, and we decide to use stepwise regression as a mechanism to help us. The technique has serious limitations when there is extensive correlation among independent variables. Let us assume that two variables X_1 and X_2 are both very strong and theoretically meaningful predictors of the dependent variable, but are very highly correlated with each other. Further, the correlation between X_1 and the dependent variable Y is .94, and the correlation between X_2 and Y is .93. In this case, only X_1 will enter the equation as an explanatory variable, but X_2 will not, because X_2 will not explain enough of the residual variance to meet any reasonable cutoff criteria. As a result, we will conclude that X_1 is a significant predictor of Y, but that X_2 is not—a false theoretical conclusion. As an algorithm, stepwise regression has worked perfectly. The technique has identified the variable that explains the most variance, but substantively it has been a total failure.

Let us elaborate on this example. Suppose that Y is the number of missile attacks against merchant shipping in the Persian Gulf each month during 1987, while X_1 is the intelligence estimate of the number of anti-ship missiles held by Iraq and X_2 is the number held by Iran. Since the two countries had been at war for six years, we would expect a high correlation between the level of armaments of the belligerents. What does our stepwise regression model advise us to offer as a prescription to merchant shippers? Since only the number of anti-ship missiles held by Iraq is a significant predictor of attacks, captains should feel free to ignore information concerning Iranian supplies. This seems an odd prescription. Suppose an accident occurs in Iraq, similar to the one that destroyed all armaments of the Soviet Union's Northern Fleet in May 1984. Our model would advise merchant shippers to relax because the number of attacks on vessels is

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only a function of the number of Iraqi armaments. The missiles held by Iran are unimportant!

The above example begs for a policy specialist who has more than simply statistical expertise. A major policy-related assumption of regression is that we have eliminated "specification error," which means that all the correct independent variables are found in an equation and that no independent variables are included that are not causal. The economists' phrase "all things being equal" means that any variable not included in an equation is uncorrelated with those that are; thus the omitted variables will not bias the coefficients. All algorithms that have been proposed to help researchers in regression modeling are an attempt to solve the specification problem.

In response to realizing that each newly proposed algorithm is flawed from the standpoint of theory building, researchers have proposed a variety of further problem-solving devices. These devices always begin as a rule of thumb and eventually some become algorithms, but by the time that they reach the statistics books, most of their substantive content has been lost and they *implicitly* are presented as devices that guarantee solutions to problems. No algorithm has had total success in building or discovering theory, because associated with each algorithm is some commonly occurring instance when it will not yield the correct theoretical model.

Once there was general agreement that a basic criterion necessary to define a discipline as a science was its ability to produce hypotheses that could empirically be disproven (Friedman 1953, Popper 1959). Beginning with Hanson (1958), the problem began to be viewed quite differently. To quote Diesing (1985, p. 63):

> Philosophers of science used to assert that the testing problem was to state a hypothesis or prediction in clear, precise terms so that facts could clearly contradict it. Now we realize that the problem is also to produce facts robust enough to stand up to a passionately held hypothesis and knock it down. Science used to be described as a process of asking clear, specific questions of Nature so Nature could answer Yes or No. Now we realize that when we ask a question, Nature mumbles or speaks in riddles. Consequently, when hypotheses and data seem to disagree, we can either declare the hypothesis refuted or declare the data misleading and in need of adjustment or reinterpretation. Conversely when hypothesis and data seem to agree, we can either declare the hypothesis confirmed or reject the data as atypical, badly adjusted, or contaminated by hidden variables, so that the agreement is a coincidence.

In looking for theories of processes, our efforts often shift from study to study, making it impossible to develop an all-purpose algorithm that can produce reasonable solutions for all our practical prob-

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lems. This situation is similar to one often encountered in strategic planning (Tamashiro 1984). Take the following set of arguments by Leamer (1983, pp. 36–37):

> The false idol of objectivity has done great damage to economic science. Theoretical econometricians have interpreted scientific objectivity to mean that an economist must identify exactly the variables in the model, the functional form, and the distribution of the errors. Given these assumptions, and given a data set, the econometric method produces an objective inference from a data set, unencumbered by the subjective opinions of the researcher.
>
> This advise could be treated as ludicrous, except that it fills all the econometric textbooks. Fortunately, it is ignored by applied econometricians. The econometric art as it is practiced at the computer terminal involves fitting many, perhaps thousands, of statistical models. One or several that the researcher finds pleasing are selected for reporting purposes. This searching for a model is often well intentioned, but there can be no doubt that such a specification search invalidates the traditional theories of inference. The concepts of unbiasedness, consistency, efficiency, maximum-likelihood estimation, in fact, all the concepts of traditional theory, utterly lose their meaning by the time an applied researcher pulls from the bramble of computer output the one thorn of a model he likes best, the one he chooses to portray as a rose.

Heuristics in Regression Models

A heuristic is a problem-solving rule of thumb. Heuristics do not guarantee solutions to problems, but they are methods that have been time tested and found to be useful. A major part of our problem is that an infinite number of models can be proposed to explain each data set, and we need some mechanism to reduce the number of potential models to a manageable group (Leamer 1983). One of the first statistical heuristics proposed was the critical significance level. It is important to note the difference between statistical and substantive significance. Statistical significance merely indicates that the probability of an observed relationship being a chance occurrence is very low. When we examine a process, however, we are interested in the variables that have a substantive or practical effect. Although statistical significance often is used as a heuristic to identify substantively significant variables, these two concepts are not the same.

Heuristics are particularly useful in modeling complex political phenomena where flexibility is required, but so too is a consistency in presenting evidence. One source of these heuristics derives from the fact that statistical evidence is often contradictory and hard to evaluate, but it is illegitimate to use wildly different methods of

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evaluation in the same study. Using different standards idiosyncratically is in bad taste, giving the impression that you are trying to prove your pet theory, and most people find gross inconsistency objectionable. Even in politics, consistency is recognized as a time-saving device that simplifies argumentation, which is why the strategy is adopted by many politicians (Asher and Weisberg 1978).

While researchers rarely make their heuristics explicit—often because they do not realize that they are doing anything novel—it is possible to catalog some rules of thumb in statistical arguments. Some come from the tradition of exploratory data analysis (Tukey 1977, Mosteller and Tukey 1971), while others have evolved independently. Many heuristics also are algorithms that do not focus on theory building; these nontheoretical algorithms emphasize other criteria, such as the maximization of explained variance. Most have numerous permutations, and a few will take researchers in opposing directions (see "Number of Statistically Significant Coefficients" and compare "Occam's Razor" with "Policy Relevance"). To simplify the discussion of these statistical heuristics, the following sections will be restricted to rules of thumb used with one of the most popular modeling approaches: regression analysis.

Heuristics for the Construction of Models

Linearity

The most commonly encountered rule of thumb is the assumption that most social processes are linear additive functions. This heuristic seems to have developed from two observations. First, the more assumptions about a process when modeling, the more the possibility of error; and a curve often requires at least one more parameter. Second, linear equations can be handled conveniently in mathematics, unlike nonlinear equation systems.

All Inclusiveness

Collect all the available independent variables and use them in one giant equation. If a smaller number of variables eventually are used in the final equation, claim that the significant coefficients represent theoretically important relationships. If the potential number of variables used is so great that you might be ridiculed as a "barefoot empiricist," apply a second step. Take only those variables that are statistically significant (as opposed to substantively significant) in the first equation and run another regression. Iterate this second step as many times as necessary until the number of variables becomes reasonable or all remaining coefficients are significant. This step is

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sometimes referred to as model pruning, a method that also has been recommended to obtain stable factor scores. Leamer (1983, p. 36) argues that "As a substitute for experimental control, the nonexperimental researcher is obligated to include in the regression equation all variables that might have an important effect." He writes (p. 37) that "The consuming public is hardly fooled by this chicanery. The econometrician's shabby art is humorously and disparagingly labeled 'data mining,' 'fishing,' 'grubbing,' 'number crunching.' "

Maximize Explained Variance

Use *all* the potential independent variables that can be gathered to maximize explained variance or the significance level of the overall F statistic. R^2 is maximized using ordinary least squares, but if one thinks about explained variance, it is unclear why a researcher would care much about maximizing R^2 in developing most simple, predictive models (King 1986). By necessity, R^2 increases monotonically as the number of independent variables increases and reaches a maximum of 1.00 by the time that *N-1* independent variables are used as predictors. Corrected R^2, on the other hand, takes into account the number of predictor variables and subtracts from R^2 the amount of variance that one would expect to explain by chance. Corrected R^2 is used more commonly in economics than the other social sciences because the level of statistically explained variance in economics generally is quite high. The various R^2 approaches can be defended as maximum likelihood procedures, but stepwise regression, maximization of R^2, and maximization of t scores may produce radically different models if the independent variables are correlated. (For more on various interpretations that can be given to R^2 in complex models, see Luskin 1984.)

Stepwise Regression

Another series of heuristics is based on maximization of explained variance in some sequential order of steps. In forward stepwise regression, variables are added one at a time until a cutoff criterion is reached. The most common criteria that are used to determine inclusion are an additional increment of explained variance or the significance level of a coefficient. In backward stepwise regression, all variables initially are included in an equation and discarded one at a time. Various criteria have been proposed for inclusion, and these sometimes can produce radically different equations (Bendel and Afifi 1977, Hocking 1976, Berk 1978).

Simple Correlations as a Screening Device

Since stepwise regression procedures can produce radically different results, some researchers have preferred a two-step process.

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First, examine the simple correlations between each independent variable and the dependent variable; then use the correlations as a screening device (Gough and Brunk 1980). According to this heuristic, only those variables that have significant simple correlations are included in the final regression equation. Unfortunately, this heuristic is susceptible to missing important nominal- and ordinal-level control variables in individual-level analyses. These control variables will have significant coefficients only when included in a properly specified model. Generally with contests (Thorngate and Carroll 1987), the more steps introduced in a methodological process, the higher the probability that the true or best result will not be identified.

Automatic Interaction Detection

Another heuristic that is highly susceptible to random data error is automatic interaction detection (AID). This algorithm computes all possible interactions among variables and uses the original variables and the interactions to predict the dependent variable. If one is using a 0.05 level of significance, there is a 5 percent probability of finding a significant relationship by chance for each interaction. Interaction effects rapidly multiply the number of potential explanatory factors, and a substantial increase will occur in both the number of significant variables and the level of explained variance (see Lovell 1983).

Heuristics for the Evaluation of Models

Having found a candidate model to explain a relationship, we see a multitude of criteria that can be used to evaluate whether such a model is reasonable. As is true with the first set of heuristics, these criteria often cause the selection of different models of a relationship. In regression, the most commonly applied evaluation criteria include no autocorrelation, white noise, sensitivity tests, and division of the sample.

No Autocorrelation

When errors are correlated over time or space, the use of ordinary least squares is inefficient. The most common problems in time series data are the presence of waves or a portion of a wave. In most instances, it is difficult to tell whether autocorrelation will inflate or deflate the value of a coefficient. The outcome depends (among other things) on whether the data series starts in the peak or valley of a wave.

Autocorrelation can be addressed in two basic ways: first, by autoregressive integrated moving average (ARIMA) or similar style modeling of a process, which admittedly is an "art" rather than a science.

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This method often is entirely atheoretical because ARIMA modeling tells us little about the processes that created a data series. Luckily, many economic and political series are only AR(1) and can be corrected easily. Unluckily, some of the most interesting processes seem to have time-dependent or ground-effect parameters. A second way to address autocorrelation is to understand the variables that have generated a process and to include them in an equation. Many times the correct theoretical model will remove autocorrelation without the necessity of including atheoretically estimated AR parameters.

White Noise

Ideally, residuals should be white noise, which means that the errors from an equation should be uncorrelated and without any sort of pattern. If the residuals are not white noise, some process has been left out of the regression that still can be modeled. This means, of necessity, that we have a specification problem and that our estimated coefficients are biased. Examination of residual plots can be quite successful in offering researchers insight for further modeling (Daniel and Woods 1980, Larson and McCleary 1972, Tukey 1977).

Sensitivity Tests

Various sensitivity tests can be applied to the final equation. The most reasonable test is to delete each case from the analysis and see if coefficients remain stable. One occasionally sees the deletion of each variable from an equation as well, but that procedure invites specification problems. Various rules of thumb have been proposed for deleting outliers in regression analysis. The most common are based on the number of standard deviations that an observation is from the mean of a variable. Other criteria are based on joint probability distributions.

Division of the Sample

If enough evidence is available, divide a sample into two portions. Use the first half to estimate a model; then examine the model's validity with the reserved second half of the data.

Heuristics for Comparing Models

Given a series of plausible models of a relationship, a number of criteria can be used to choose among them, such as parsimony or Occam's Razor, theoretically meaningful intercept, number of statistically significant coefficients, policy relevance, theoretical justification, correct signs of coefficients, and the critical experiment.

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Parsimony or Occam's Razor

This approach was first proposed by William of Occam. Early science and religion often were treated as two sides of the same coin, and religious men, such as Gregor Mendel, gave us many important scientific theories. Occam's rule was quickly accepted by the scientists of his day, who wanted to remove supernatural factors, such as the intervention of angels, from explanations of common physical events. Occam argued that it was preferential to say, "A causes B," rather than "A is implemented by one of God's angels to cause B." If the angel is busy one day or you have offended God, B will not occur. Occam's Razor helped remove religious influences from modern science but was equally successful in solving more complex problems of causation, which is why it is cited today. If one theory of behavior has four steps and another theory has three, the theory with only three steps is most likely correct because nature prefers simplicity.

Statistically, an F test can be used to see if one model explains significantly more variance than its competitors. If there is no significant difference in the levels of explained variance, choose the model with the smallest number of parameters. It is reasonable to think that simple effects are more common than interactions and to argue for finite causation, disregarding those effects for which a strong case cannot be made (Campbell and Stanley 1966). Unless a good theoretical argument supports a complex model, the model probably will fall apart when replicated.

Theoretically Meaningful Intercept

If two models are otherwise equal, choose the alternative in which the prediction of "the value of Y when all X's equal zero" is most reasonable from a substantive standpoint.

Number of Statistically Significant Coefficients

Given two models with an equal number of estimated coefficients that explain about the same amount of variance, choose the model with the largest number of significant coefficients (if you prefer a complex system) and with the least number of significant coefficients (if you prefer Newtonian simplicity). This choice really is a matter of personal taste, although it seems that sociologists and causal modelers prefer complexity, while political scientists and regression modelers prefer simplicity.

Policy Relevance

An example of a "good" reason for more elaborate models comes from a rule of thumb called "policy relevance." According to this

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heuristic, models of social processes are not useful to policymakers unless they contain variables that can be manipulated by government. Applied policy analysts choose this method because their most important goal is to offer public officials policy alternatives for the potential resolution of society's problems (Kash and Ballard 1987, pp. 601–2).

There are two important, and undesirable, consequences of this rule of thumb. First, "policy relevance" promotes pro-statist ideologies since it encourages developing a literature that makes it seem that changes in society can easily be affected by governmental action. This situation comes about because the heuristic tells researchers to search in a systematic manner for variables that can be manipulated by government. When this search strategy is combined with statistical errors caused by inclusion of spurious variables because of the level of significance selected by the researcher (for example, a 0.05 level results in 5 percent of tested noncausal variables appearing to be important causal factors), the number of seemingly manipulatable variables affecting society's behavior will be much greater than if researchers did not use the "policy relevance" heuristic when choosing variables. Despite the predominance of such a pro-interventionist literature, a legitimate debate remains over how much impact governmental actions can have on many types of behavior and even whether laws can have an impact on some very fundamental types of behavior (see Lewis-Beck and Alford 1980).

The second consequence of years of applying this heuristic is that we are much more self-confident about the efficacy of public policy analysis than would be justified by applying a tradition of empirical analysis that did not stress including independent variables that can be manipulated by policymakers. This "policy relevance" approach has encouraged the nonrandom production of a particular type of model. While these models tell us that what we public policy analysts do has great value for society, we can be sure that the "policy relevance" rule of thumb has resulted in a substantial overestimation of our potential usefulness.

Theoretical Justification

Use only variables that are explicitly suggested by deductive theory or that appear in the literature. Nothing is more frustrating than having constructed a large data set and having found that your best predictor of Argentine social welfare expenditures is coal production in Chile. While there may be a connection between the variables, it is unlikely, but if you think about them long enough, you surely can come up with something. This version of the "garbage in—garbage

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out" problem is frequently encountered in factor analysis. You would have been better off to not have collected the atheoretical data in the beginning.

Correct Signs of Coefficients

The signs of all coefficients should be in the correct direction. One of the easiest ways to "cook" data analyses is through an ex post facto determination of the sign of a variable to make it appear to be "policy relevant." This route allows one to find 5 percent more "significant" variables using a 0.05 significance level for one-tailed tests because this is a 0.10 level for a two-tailed tests. Such chance relationships will not be sustained in future studies.

The Critical Experiment

Attempt to conduct a "critical experiment" in which your candidate models predict that radically different outcomes should be observed. Although this strategy has not been used much in the social sciences (for example, Reed and Brunk 1984), it has a long tradition in the physical sciences. With luck, one model will predict correctly and the others will not.

An Experiment in Modeling a Process with Policy Implications

While a number of simulations have investigated the efficiency of particular statistics, only a few simulations exist of research heuristics (see Granger and Newbold 1974, Lovell 1983). Boyne (1985) summarizes over 100 different studies of public policy outputs and finds that many differences between studies seem to depend on the variables or rules of thumb used by researchers. The total number of independent variables also appears to have a major effect on the results of policy studies (Lewis-Beck 1977). Similarly, studies of various sorts of contests indicate that the best person rarely wins any complicated event (Thorngate and Carroll 1987). Unfortunately, the existing quantitative evidence on these issues has reached few practitioners, and we know little systematically about how higher-level heuristics affect research outcomes. Because evidence on these issues is so scattered, some practitioners may not be convinced by a simple recitation of ways that different prescriptive models can evolve from applying statistical techniques. In fact, varied policy prescriptions often will be proposed because of different research heuristics. What is needed is a demonstration of the problem's consequences using a typical data set of the sort often encountered in applied policy situations.

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If research heuristics commonly have only small impacts on the conclusions of most studies, then the net impact of research heuristics on policy analysis will be slight, and we will have few problems from this source. But if research heuristics can have a major impact on our results—and anecdotal evidence suggests they often have major impacts—then we will have to recognize that, even in principle, the foundations of policy analysis can never rest primarily on simple mechanical analyses of data. Instead, sound policy analysis will have to be based on a large and explicit body of theory, much of which has yet to be developed.

For my graduate course in advanced regression, the final exam is a modeling exercise that takes about three weeks to complete. Last year's class consisted largely of Ph.D. students in political science, MPA and DPA students in public administration, and people already employed in relatively high positions in the state bureaucracy. A number of class members would soon become professors teaching policy analysis or public administration, or they would take jobs with state, local, or national agencies. The course covered, in part, correlations, partial correlations, assumptions of regression, multiple regression, stepwise regression, analysis of variance, *F* statistics for models, ideas of heteroscedasticity, autocorrelation, white noise, dummy variables, interaction variables, intervention analysis, curvilinear regression, and various transformations, including logarithms. One's grade depended on offering a correct interpretation of each statistic and demonstrating an ability to model social processes. Individuals who completed the course have much more practical training in applied statistics than the majority of academic social scientists and applied policy specialists.

As part of their final exam, students must model the yearly number of bank failures in a southwestern state from 1933 to 1985. They used the type of evidence that might be called on when offering policy prescriptions for the current banking crisis. Modelers were provided with reasonable simulated time series, but not the actual data series, to prevent the argument often encountered at professional conventions: "I have found the only *true* model, and all other candidate models are wrong because I have the *truth*." Individuals were not allowed to introduce new variables, but could assume—for the sake of argument—that all variables in the master data set could be justified on the basis of theory.

The situation was made as realistic as possible, and the potential explanatory variables that were included in the data set were those often found in "political economy" explanations. The potential explanatory variables included a banking law passed in 1960 that

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could be modeled using intervention analysis, the unemployment rate, the political party of the president, the number of individuals employed by the Federal Deposit Insurance Corporation (FDIC) in the state, the average personal income in the state, the proportion of the state's population over age 60, and whether the United States was at war. Models also could be developed that attempted to capture the relationship using time trends. To give the reader some idea of the relationships among the variables, Table 1 presents the correlation matrix for the experiment, using the dependent variable (bank failures) and some of the potential explanatory variables. There is substantial multicollinearity among some of the independent variables, as is common in actual data analysis.

A number of factors constrain how an individual honestly may attempt to model a process. These factors include the nature of the process, the variables available to model a process, the data points available, random error, a person's perception of the nature of the world, and the research heuristics that are used.[1] Since all individuals used the same data series, the evidence each individual had available for modeling was identical, as was the element of random error. Further, the same set of variables initially was defined to be of potential theoretical importance.

While individuals were alerted to the problem of autocorrelation and the difficulties it caused in regression, standard corrections for autocorrelation were not discussed in the course, and no one used a computer program that would estimate an autoregression model. A long period sine wave and various other trends were included in the simulated data, making it impossible to construct a parsimonious model with close to white noise for residuals unless one incorporated time trends. This step was deliberate. It forced individuals to choose among alternative models, and no simple model was quite adequate to fully explain the process, as generally is the case in real-life situations.

The Models

A major dispute in the social sciences concerns the worth of statistical modeling techniques vis-à-vis theoretical models. At the extremes, two camps can be discerned. In one group are the extreme inductive practitioners, who claim that if we were just given enough funding for our research, we could solve most of the world's problems by the sheer force of data analysis. This position was forced on the early

[1]Another factor that might affect a person's ability to model such a process is competence. This factor was controlled by the first course in the methods sequence: Only one-half to two-thirds of the graduate students each year manage to pass the first course.

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TABLE 1

CORRELATIONS AMONG MAJOR VARIABLES

	Bank Failures	Percent Unemployed	Party of President	Employees of FDIC	Average Income	War	Percent over Age 60
Percent Unemployed	.01						
Party of President	.12	.17					
Employees of FDIC	−.01	−.08	−.39				
Average Income	−.21	−.14	−.42	.92			
War	−.24	−.18	−.14	−.18	−.12		
Percent over Age 60	−.16	−.18	−.39	.69	.77	.08	
Time	−.31	−.23	−.52	.82	.95	−.03	.78

proponents of factor analysis by their critics, who asked them the annoying question of whether the fairly complex law of gravitational attraction could have been discovered through factor analysis, even though it is a nonlinear function. In the other camp are the pure theoreticians, who, in the extreme, contend that social scientists understand so little about social behavior that we should restrain ourselves from giving any policy advice for the foreseeable future. Such scholars further believe that the accumulation of more and more data is not the simple key that will bring the development of better theory.

The present empirical evidence may shed some small light on this issue. If the extreme inductivist position is correct, the models produced by disinterested, well-intentioned, and reasonably competent individuals will tend to be similar. On the other hand, if sound theory motivates most stable statistical analyses, the models produced should be quite different.

The evidence pertaining to this issue is presented in Table 2. At first glance it is clear that these well-intentioned individuals developed many different models. Although encouraged to discuss the process among themselves, which should have minimized variation among the models, 13 different models were developed by 15 individuals. In examining the sources of these various models, one of the two pairs of identical models ("Occam's Razor" and "Theoretically Meaningful Intercept") was found to result from individuals working together, while the other pair ("Sensitivity Tests" and "Division of the Sample") seems to have been produced by using the same automatic stepwise regression routine. The level of explained variance (R^2) ranged from 4 percent to 61 percent, while the corrected variance ($\overline{R}^2$) ranged from zero to 56 percent.[2]

An examination of the written justifications that individuals gave for their models indicates that all the presentations are at least minimally defensible, and some substantive justifications are quite creative. One modeler cited a local newspaper article that claimed the overzealousness of the Federal Deposit Insurance Corporation was responsible for most bank failures—not the actions of the banks themselves. According to this argument, the region's banks have always been reckless. The amount of risk taking has not changed over time; all that has changed is the FDIC's practice of closing almost-bankrupt institutions. The "solution" to the problem is to go

[2]The three individuals who developed models explaining less than 20 percent of the variance will be ignored in the remainder of this discussion.

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back to the "good old days" when there was little supervision of local banks.

The first striking feature of the evidence in Table 2 is the remarkable difference in level of variance explained by the modelers. The second striking feature is the substantial difference in the variables that were used to predict bank failures. Three modelers argue that the unemployment rate, as a policy prescription, is significant in forecasting bank failures; thus political manipulation of the economy might be appropriate. But four others contend that economic conditions are not related to bank problems. Only one modeler found that the 1960 banking law had any significant impact, three concluded that increasing state income over time had a significant impact, and only one found that war had a significant impact.

Our discussion of research heuristics and the results of this simple experiment should raise grave doubts about the naive assumption that a group of well-intentioned individuals, who have no ideological axes to grind, will develop similar models of a policy process. In fact, the evidence indicates that *the bare-foot empiricist position is bankrupt*. This argument is similar to the recent conclusion regarding the theory of games published by Thorngate and Carroll (1987). They show that in most types of complicated contests, the most-qualified person rarely wins.[3] Similarly in policy analysis, the more complicated the process and the less the theoretical guidance, the more likely that policy prescriptions will diverge when based on data alone. The problem appears to be so serious that in most complicated situations we can assume that policy prescriptions will diverge most of the time when they are not guided by theoretical considerations.

Conclusion

This paper has examined a number of the heuristics or model-building criteria that researchers use when conducting statistical analysis in the social sciences. While it has been obvious for many years that different scholars often arrive at very different policy prescriptions using similar data sets, an important source of these differences has been neglected. In applied analysis, policy differences often have been ascribed to conscious or unconscious manipulation of data by researchers. In fact, many policy differences seem to come from the research rules of thumb that individuals use when making statistical decisions. While mechanical algorithms are useful in

[3]Besides being embarrassing for policy analysis, this conclusion seriously undermines traditional democratic theory. For a nontraditional logic that justifies traditional voting rules and might have applicability for policy analysis as well, see Riker (1982).

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TABLE 2

MODELS OF SIMULATED BANK FAILURES, 1933–85

Model[a]	$\bar{R}^2$	Constant[b]	Time[c]	Banking Law Intervention[d]		Unp[e]	Party[f]	FDIC[g]	Income[h]	War[i]	Age[j]
1	.56	54.31	−2.10*	—	—	−1.11*	—	—	−7.74*	—	—
2	.56	23.56	−1.39*	—	—	—	—	−2.73*	—	—	—
3	.54	46.78	−1.72*	—	—	−.93*	—	—	−6.30*	−2.16	—
4	.33	22.67	−0.93*	.62	5.68	−.36*	−4.90*	.59*	—	−2.84	.32
5	.32	34.67	—	.49	9.69*	−.29	−2.35	.56	−13.71*	—	.49
6	.31	12.62	−0.49*	—	—	−.25	−1.79	.60*	—	−3.63	.40
7	.27	13.78	−0.43*	—	—	—	—	.43*	−2.26	—	—
8	.26	14.56	−0.33	—	—	—	—	.58*	−1.13	—	—
9	.26	13.33	−0.45*	—	—	—	—	.47*	—	—	—
10	.26	13.33	−0.45*	—	—	—	—	.47*	—	—	—
11	.22	22.42	—	.85	—	−.15	−0.41	.96*	−5.13	—	−.03
12	.22	22.42	—	.85	—	−.15	−0.41	.96*	−5.13	—	−.03
13	.16	8.87	−0.58*	—	—	—	—	—	2.63	—	—
14	.03	8.11	—	—	—	—	0.25	—	—	−4.13*	.00
15	.00	9.69	—	—	—	—	−0.03	—	−0.53	—	.04
Base	.35	25.66	−0.72*	.76	8.16*	−.36*	−4.50*	.92	−3.09	−2.95	.37

[a]Other variables found in equations and their coefficients:
Model 1: Change in Income = 0.26* Unp (Time) = 0.03* Time = 0.06*
Model 2: FDIC^2 = 0.00* Time^2 = 0.04*
Model 3: Unp (Time) = 0.03* Time^2 = 0.04*
Model 5: Income^2 = 0.71*
Model 6: Income^2 = 0.00*

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The "base model (equation) includes all standard variables to provide a baseline for comparison. In each model, a star indicates a coefficient is significant at the 0.05 level for one-tailed tests.
[b]All constants are significantly different from zero.
[c]Time = Time in years.
[d]Banking Law Intervention: First coefficient is change in slope after passage of the law; second coefficient is the first-year effect of the law.
[e]Unp = Percent unemployed.
[f]Party = Dummy variable for president's party (0 = Republican, 1 = Democrat).
[g]FDIC = Number of people employed by the Federal Deposit Insurance Corporation in the state.
[h]Income = Average individual income in $1,000s.
[i]War = Dummy variable (0 = Peace, 1 = War).
[j]Age = Percent of state's population over age 60.

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maximizing explained variance, they are only of limited utility in theory building or in modeling any but the simplest processes. They cannot provide a foolproof, mechanical solution to most problems. Individuals can use a multitude of research heuristics when modeling political, economic, and social processes. The choice of a particular heuristic is personal, based on previous experience, and often has a major impact on one's final prescriptive model. At a minimum, the realization of this problem casts grave doubts on our ability to offer reasonable policy prescriptions simply on the basis of inductive statistically reasoning.

What then should be done? In the short run, the strategy of policy practitioners in offering politicians and bureaucrats a set of feasible policy options seems defensible. The political process can decide which set of assumptions about society is most reasonable and can use the technical evidence provided by experts in making decisions for society. But we should realize that the probability of our offering reasonable prescriptions to problems based simply on statistical evidence is smaller, perhaps much smaller, than most of us have believed. Particularly as the problem's complexity increases, the probability of offering an optimal or even a reasonable solution based on empirical evidence is very low unless the researcher is guided by explicit and well-developed theory.

Therefore, in the long run, specialists in the academic side of policy analysis should stress theory building. Of equal importance, in teaching future policy practitioners, we should attempt to define as clearly as possible both the areas in which our theories are well developed and those areas in which our theories are soft and fuzzy. The goal of academics should be to develop theories that tell practitioners in advance what variables are important for policymaking, and ideally our theories should tell practitioners this independently of any given statistical analysis. The role of methodology in most applied analysis should become the estimation of the strength of parameters when relationships are well understood, rather than the inductive modeling of processes that are little understood.

Until we have developed better theories of many social processes, we can be sure that ideological debates will continue to flourish in policy analysis. Even when we clearly can demonstrate that researchers have not manipulated their evidence to support their preconceived positions, the methodological heuristics that individuals employ often bring them to advocate radically different inductive models of statistical relationships, and hence to very different public policy prescriptions.

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Privatization and the 19th-Century Turnpike

Gerald Gunderson

Introduction

Americans "discovered" privatization in the 1980s as their concern about the cost and adequacy of government programs increased. But deciding whether particular services should be provided by public or private agencies is a long-standing concern, extending all the way back to the formation of the Jamestown colony. In fact, American history provides one of the richest arrays of examples as to how privatization can work. By virtue of undergoing enormous changes, including performing as the world's largest economy since the mid-19th century, America has been an excellent laboratory for voluntary institutions.

American institutional diversity spans all the way from completely private and voluntary efforts to those provided entirely by government. By this dimension, highway systems usually appear among the least promising for private operation. Modern scholars have worked out the precise reasons why private owner-operators would be expected to perform unusually poorly in the environment of roadways.[1] The instincts of average Americans long anticipated the experts, however, concluding that the benefits from road systems were so diffuse that private firms could not recoup enough in tolls to support the appropriate amount of services. The logic of their reasoning is unassailable. Roads are valuable precisely because they allow access among locales. Thus, one would expect that because they must levy tolls to support operations, private roads must discourage travelers in order to control

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[1]See, for example, the discussion of public goods in a standard economics textbook such as Gwartney and Stroup (1987, chap. 17).

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access, adding to the deterrence of the tolls themselves. In other words, that form of administration is believed guilty of making transactions excessively costly as well as misallocating social resources.

Recent scholarship helps us to understand that highways need not be a clear-cut "public good" as has been commonly supposed (Cowen 1988). They need not fulfill the two requirements which imply that the service must be provided through government in order to be provided efficiently. First—unlike a true public good—each user of a highway imposes a cost on other users by occupying space as well as wearing the roadway. Second, users can be selectively denied the services of the roadway. This allows managers to charge a toll for admission and, more generally, regulate the use of the road. While such exceptions may appear picayune, they allowed enterprising Americans sufficient leeway to create a comprehensive network of private toll roads in the early 19th century.

The Rise of American Turnpikes

In the first three decades of the 19th century Americans built more than 10,000 miles of turnpikes, mostly in New England and the Middle Atlantic states. Relative to the economy at that time, this effort exceeded the post–World War II interstate highway system that present-day Americans assume had to be primarily planned and financed by the federal government. The turnpikes markedly upgraded the road system. Roadbeds were smoothed and hardened to aid year-round use. Curves were straightened and bridges replaced fords. This prompted a predictable surge in traffic and gave a big boost to the developing economy. Toll roads continued to carry much of the interior commerce of the United States until newer technologies, particularly steamboats and railroads, surpassed them.[2]

The conditions that prompted turnpikes began developing in the latter half of the 18th century. Colonial roads had been the responsibility of the local township. Each elected one of their number to supervise construction and maintenance. The supervisors were empowered to call all able-bodied residents to repair roads several days each year. The arrangement was widely disparaged because unseasoned supervisors and unenthusiastic workers obviously produced much less than a professional operation would have yielded (Taylor 1951, chap. 2). Yet the common wisdom may be wrong. While the output seemed mediocre, the cost of the resources was correspondingly low. Work was scheduled during slack farming periods

[2]See Durrenberger (1931), Evans (1948), Kirkland (1948), Taylor (1934), and Wood (1911).

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and pursued by parties who gained from repairing ruts and potholes in decreasing order of their damage.

The growth of the economy, particularly the expansion of interior trade about 1800, put severe strains on the informal system of colonial roads. Increased traffic overwhelmed the townships' ability to maintain the through routes, eroding the roadbed long before local work parties returned to restore them. The resulting frustrations prompted a general outcry for better road management practices. After the Revolutionary War, Americans experimented with such administrative reforms as converting resident obligations from road work to taxes in order to hire private contractors. Other variants were borrowed from the English turnpikes that had already been developed in the face of a similar challenge. The English had settled on the mechanism of a "trust," which administered major highways much like a public utility. While roads were owned and managed by private investors, tolls were regulated by government to ensure a "reasonable" return (Pawson 1977).

Americans were dissatisfied with this particular mechanism and attempted to develop more suitable alternatives. While maximum toll charges were usually specified in the charter, American managers were allowed more discretion in structuring operations. Also in contrast to the English practice, American toll roads drew their capital primarily from the locality they served. No doubt the absence of an American capital market encouraged this practice, but it also cleverly enlisted the support of the indirect beneficiaries of toll roads. Not long after the first toll roads began operations, Americans generally recognized that such investments would not match the dividends of competing investments. Most investors, therefore, had to be enlisted by the promise of other benefits that such projects promised to their own enterprises in their locality (Wood 1911, pp. 35–36; Durrenberger 1931, pp. 105–106).

This tactic of tying the total returns of a local turnpike to those of local investors ruled out an advantage that financial markets can supply. Underwriters understand that a stock must be priced so that its expected yield is competitive with the return on other assets. This standardization equalizes the advantage of holding securities so that investors are indifferent among them. In England, where turnpike tolls were regulated so as to maintain a competitive return on the investment, most securities gravitated to investors living outside the locality. But in the United States, the investor's residence and the market for the local turnpikes were tightly linked, which meant that capital was not likely to be drawn from the cheapest source.

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Considering this drawback, the American solution appears ingeniously effective. After obtaining a charter from their legislature, organizers of a potential toll road approached the test of attracting local investors. A high percentage of the initial proposals failed to convince sufficient investors that the returns were worthwhile, thus stymieing the project. But many of these ventures discovered other groups of supporters, redrew their proposal to accommodate them, and returned to the legislature for a revised charter. A large share of toll roads were constructed with revised charters.

Thus, despite their idiosyncratic orientation, turnpikes were formed in a type of "market." The process paralleled the procedures employed by modern underwriters of securities. In essence, suppliers of turnpikes were sought—that is, those who would invest in them—who could be matched with consumers—those who would pay to use the new roads. Some buyers and sellers were one and the same, but considerable entrepreneurial effort still was required to develop the two congruent slates.

The experience of developing turnpikes suggests an advantage of privatization that does not often seem appreciated today, even by its proponents. Turning government services over to private suppliers is usually justified by the promise of reducing costs and improving quality. But the critical decision in founding many turnpikes was discovering uniquely local demands that could be meshed with the turnpikes' services. Programs leading to uniform application—as government initiatives typically do—will block localized opportunities. Turning prisons over to private suppliers might, for example, prompt much more ingenuity in using the captive labor supply, while ending the federal postal monopoly could encourage services providing home delivery, such as newspapers, to consolidate services. More broadly, one could make a case that rather than the traditional assumption that public goods require government management, the causation is reversed. The assumption of public ownership converts activities into a public good.

The local matchmaking between turnpike investors and users was complemented by a search by states for the most effective institutional structures. When the process was completed, an array of turnpike procedures suited to circumstances of particular states had been created. States that already had comprehensive road systems understandably sought procedures that emphasized maintenance. Most states, however, were concerned primarily with fostering development in unsettled areas and stressed construction of new roads. Massachusetts refused to grant charters unless a new roadway was the primary objective. Other states, particularly Pennsylvania and Vir-

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ginia, sought to recognize and encourage the indirect benefits of roads through subsidies.

Such matchings suggest an important corollary. These days it is commonly assumed that government must foster activities that produce large amounts of indirect benefits. Indeed, many government initiatives are primarily justified by such arguments. But it is often overlooked that many privately produced goods and services also create indirect benefits that are difficult for providers to appropriate. Moreover, there is no compelling reason to believe that sectors such as transportation create a higher proportion of indirect benefits. Improved roads undoubtedly promote economic efficiency in a locality but it is not obvious that the resulting benefits are greater than if the same resources improved health through the purchase of better food or housing.

Americans debated the appropriate treatment of indirect benefits from transportation during this period under the rubric of "internal improvements."[3] All through the antebellum period, appropriation bills were introduced in Congress for transportation projects to tie the developing West and South more closely to the East. Clearly the direct beneficiaries were the West and South, but the common argument for their adoption stressed that the benefits to all parts of the nation were sufficiently large to justify national financing. Americans, however, were never sufficiently persuaded to go beyond token projects such as the National (Cumberland) Road. A good part of this predilection was undoubtedly a general reluctance to employ the government on anything beyond obvious public needs. This also helps explain the public's general endorsement of private turnpikes, which occurred in an intellectual climate that was skeptical of big government. Whereas today the general attitude is that almost every "problem" is capable of being ameliorated by government action.[4]

The toll roads' integration of investors and consumers improved the efficiency of capital. Prior to turnpikes there had been considerable slippage between the incidence of taxes and labor obligations imposed by the townships and the services that users received from the resultant roads. Taxes were levied on real estate and personal property. That formula probably corresponded to the benefits that groups such as farmers drew from local roads but failed to reflect the benefits of other groups, such as merchants. That imbalance seems to have been increased by the growth of through traffic, thereby contributing to the growth of the belief that the existing system was

[3]See Goodrich (1948, 1950).

[4]On the change of attitude toward big government, see Higgs (1987).

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so unfair that replacement by something along the lines of turnpikes was warranted.

Regional Variations

The first major turnpike employing the new "American model" was begun in 1792 between Philadelphia and Lancaster, Pennsylvania. It replaced the main route that passed through about a dozen jurisdictions that had proven unable to maintain their portion of the thoroughfare. The project was an immediate success. Traffic increased dramatically because even after paying tolls, travelers found it markedly superior to the roadways they had previously endured. Other localities who were grappling with the same problem were quick to grasp the implications. Within a few decades, turnpikes had been adopted in most densely settled areas, forming the framework of a productive road system.

As Americans applied the (encouraging) model of the Lancaster turnpike elsewhere, variations developed appropriate to local conditions. One obvious characteristic was the density of projects, in particular the concentration to the Northeast. More than half of the turnpikes, measured either by mileage or invested capital, were in New York and New England. And most of the latter were in the three southernmost states of Massachusetts, Rhode Island, and Connecticut, especially when gauged by the cost of construction. Moreover, they were also assembled faster than turnpikes elsewhere in the country. More than three-quarters of the ultimate total were in use in 1810.

This pattern seems to be explained by the density of commerce. Southern New England and Eastern New York included a large share of the wealthiest and most populated areas of Federalist America. Considerable intraregional, overland transportation already existed so turnpikes there promised to aid established commerce as well as stimulating new traffic.

Among such areas Connecticut exemplified this pattern. Unlike Massachusetts and New York, which still had substantial unsettled western lands, the frontier had moved beyond Connecticut's borders. The 1,600 miles of turnpikes instituted in Connecticut were almost twice the length of those in neighboring Massachusetts whose area was 60 percent larger. The success rate was also noticeably better. Only 13 of 113 turnpikes chartered in Connecticut failed to be instituted while in neighboring Massachusetts and Rhode Island the failure rate exceeded 40 percent. Connecticut's interests, therefore, were predominantly improving *existing* routes. In fact, the state went

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so far as to construct new roads before turning them over to turnpikes. Connecticut demonstrates that turnpikes were not merely a device to raise capital but also promised important gains in the maintenance and operation of roads.

The Fall of American Turnpikes

The rapid adoption of turnpikes in the Northeast was paralleled by comparatively early dissolution. By 1820 turnpike managers began relinquishing sections to public authorities on which traffic had diminished. Many were completely returned to the respective states in the 1830s and 1840s. The causation seems the same as that which propelled their adoption. Relatively dense traffic made the introduction of new, competing technologies, particularly steamboats and railroads, attractive. Typically, turnpikes that survived longest were usually the relatively simple farm roads removed from major thoroughfares.

The central role steamboats played in the demise of turnpikes is easily overlooked. They preceded railroads by almost three decades. But unlike railroads, they seldom competed parallel to main highways because waterways were circuitous. Even so, the comfort and greatly reduced freight costs of steamboats diverted much traffic away from main roads. This explains why turnpikes were clearly declining prior to the 1840s when the railroad began to have a significant presence.

To the west and south, turnpikes were less common and were introduced at a slower rate. The explanation seems consistent with the analysis for the Northeast. The population density and spending in the West and South were relatively low. Moreover, before this area surpassed the frontier phase and begin to support toll roads, technology was already being developed for alternative means of transportation. West of Ohio, for example, steamboats and railroads offered the best alternatives to toll roads early on. Accordingly, the turnpikes that were attempted were mostly in the "old frontier," such as Western New York, Pennsylvania, and Virginia. These regions had settlers in the early 19th century when turnpikes became feasible but not enough to support a comprehensive network.

It is not surprising, therefore, that the states in the "old frontier" experimented with public policies that attempted to compensate for the deficiency of private demand. The mid-Atlantic states, particularly Pennsylvania, Maryland, and Virginia, were keenly aware of the potential for commerce with the growing West. New York seemed to be winning the race for the West so the other players were actively

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searching for ways to become more competitive. Toll roads, along with canals and railroads, were a natural component of such strategies.

Alone among the states, Pennsylvania attempted to encourage turnpikes by becoming a partner in them; in other words, the state purchased stock in formative projects much as local investors were being solicited to do. The logic of this tactic is not clear. It seems unlikely the state expected to recoup much from its investments, as the lack of dividends from toll roads was widely recognized. Nor did Pennsylvania seem to use its equity position to dictate operating policies of the roads. Whatever the case, the exercise was cut short by the panic of 1837 during which Pennsylvania defaulted on its bonds and thus suspended its internal improvements.

Virginia followed a more typical government tactic, giving construction subsidies to turnpikes deemed to have particularly large social benefits. Subsidies ranged from 11 percent to 60 percent with 35 percent to 40 percent being typical (Hunter 1957). The results were disappointing. The claims for meritorious need for projects were shaped much more by the political influence of recipients in the legislature than by an objective assessment of likely benefits. Much of Virginia's toll road assistance went to its western routes in the mountains, routes that had little chance of becoming major thoroughfares.

Private and Public Choice

Fundamentally, the establishment of turnpikes was the creation of a new set of property rights. Previously, maintaining the road was a broad, collective responsibility while there was no charge to anyone for using it. Turnpikes dramatically narrowed the road's ownership, catalyzing the interests of the owners to identify and satisfy potential users. So, for example, while states sought to safeguard users against monopolistic pricing by setting maximum tolls, it was common for private owners to charge much less than the maximum in order to attract travelers. This search by turnpikes for their own individual optimums fostered efficiency of local resources that universal rules could not elicit.

The rearrangement of property rights increased the collective net gains to participants in the road systems. This meant that it was possible for all major participants to share in the benefits and, thus, to have reason to support the new institution. The organizers of turnpikes showed acute sensibility and ingenuity to this end. The techniques they employed to win over major constituencies is a valuable lesson for modern times. For example, travelers on longer

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trips paid much of the tolls, but found that better traveling conditions more than compensated for the expense. While local users lost free access to the public roads, they received exemptions for many workaday functions as well as the savings in taxes levied for road maintenance. The local landowners and merchants who supplied much of the capital benefited from increased trade over and above the dividends they earned on their stock.

Turnpikes were quickly embraced because they satisfied an obvious widespread need. The rapid expansion of long-distance, overland transportation put a premium on improving primary highways. Thus, turnpikes were welcomed because they were the catalyst to improve economic opportunities. This situation contrasts with the contemporary environment where the process of privatization is frequently asssociated with sacrifice. Frequently, privatization has been advanced as a means to cut public spending, which has made Americans resist privatization despite its overall economic benefits.

Turnpikes also suffered from the special peculiarities of the market they served. Many declining sectors are able to consolidate firms and adopt their services to new formats. But turnpikes had to maintain tollbooths continuously at several points in order to collect revenue. In other words, toll roads suffered from high transaction costs and required a large flow of traffic to become self-sustaining, let alone to begin to recoup the investment in the roadway. Thus a decline in traffic, in response to better alternatives in longer distance travel, could quickly produce short-run losses and destroy long-run profitability.

The demise of turnpikes points to another advantage of privatization. Private operations are much more likely to cease operations when demand becomes inadequate. The worst defect with public operations is probably not so much starting improper services as getting them stopped once they become unprofitable. Public suppliers have much more leverage to keep the revenues coming from taxpayers than they do from unsatisfied users.

When the turnpikes began to lose their prime customers, the long-distance users, the private owners had to make adjustments. And unlike governmentally run projects, which can rely on legislative assistance, privately run roads were forced to drop the least remunerative sections. Such disciplinary action, taken under decentralized decisionmaking, provides a wealth of information that is unobtainable in a centralized system. It is this connection that modern opponents of privatization continue to neglect and in doing so fail to see the opportunities inherent in private as opposed to public choice.

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James Buchanan and the Austrians: The Common Ground

Charles W. Baird

In June 1974 at a conference on Austrian economics in South Royalton, Vermont, Milton Friedman asserted that "There is no Austrian economics—only good economics and bad economics" (Dolan 1976, p. 4). According to Friedman, what is good about Austrian economics could, and eventually would, be incorporated into generally accepted mainstream analysis. My theme in this paper is that the economics of James Buchanan, the 1986 Nobel Laureate in economics, already incorporates much of what is good in Austrian economics. I do not claim that Buchanan consciously and purposefully adopted Austrian analysis in his own work. I merely claim that the economics of James Buchanan has much in common with modern Austrian economics, especially the work of F. A. Hayek and Israel Kirzner.

In the first two sections a broad outline of the relevant features of modern Austrian economics is presented. This broad sketch is followed by a consideration of three significant statements of Buchanan regarding Austrians and Austrian economics. Next, the influence of Knut Wicksell and Frank Knight on Buchanan is discussed. Their influence, I believe, is the source of the Austrian link. The paper then explores the alleged common ground by considering, in turn, general economics, cost, and political economy. A brief concluding section rounds out the paper.

What's in a Name?

The adjective "Austrian," of course, refers to the historical roots of the analysis, not to the nationality of its present adherents. Unfortu-

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nately, the label carries a strong negative affect with many mainstream economists. There are two reasons for this. First, Austrians have steadfastly refused to accept mathematics and statistics as the *sine qua non* of good economics. They have clung to the view that good methodology in the physical sciences is not necessarily good methodology in economics. To economists who wish to claim for themselves the same scientific stature as physicists, the Austrian view is anathema. (We will return to the question of methodology later.)

Second, some Austrians often appear to act as guardians of metaphysical truth. As Buchanan ([1976] 1979a, p. 84) puts it, there is a "tendency to form a priesthood, with the converted talking only to converts." There is such a tendency among some Austrians, and I think it is due, in large measure, to the derision that has greeted Austrian attempts to discount mathematics and statistics in economics and to warn insistently of the limits of economists' ability to write helpful public policy prescriptions. Such attempted prescriptions, Austrians assert, are likely to make things worse rather than better. Austrians are often dismissed by practitioners of neoclassical orthodoxy as free-market ideologues who cannot count. If mainstream economists will not take them seriously, the Austrians cannot be faulted for "talking only to converts."

Friedman's assertion that there is only good economics and bad economics does not imply that there is no such thing as Austrian economics. After all, Friedman distinguishes between "monetary economics" and, say, "environmental economics." Austrian economics is a field of economics that can be viewed, if protagonists on both sides are sufficiently tolerant, as an analytical complement to the neoclassical, comparative static analyses found in most undergraduate and graduate microeconomics textbooks. I have often thought that Austrians need to adopt an alternative label for their analysis—a label that describes the nature of the analysis rather than its historical roots. "Market-process economics," or "subjectivist-discovery economics" are good candidates. If some new name were adopted, attention could be focused, as it ought to be, on whether the analysis is good economics or bad economics. I think it is good economics, and, judging from the extensive common ground he shares with the Austrians, so does James Buchanan.

Distinguishing Characteristics of Austrian Economics

According to Ludwig von Mises (1969, p. 41), he and most economists used the term "Austrian School" in the 1920s only in a history-of-thought context. The significant insights of the Austrians had been,

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it was thought, incorporated into contemporary mainstream analysis. It was not until the 1930s, during the height of the socialist calculation debate, that Mises and Hayek came to realize that, although mainstream economists and Austrian economists frequently used the same words in their analyses, they did not attach the same meanings to those words. For example, the mainstream understanding of such concepts as marginal utility and opportunity cost was substantially different from the Austrian understanding of the same terms.

Because of such differences of interpretation, Oskar Lange and Abba Lerner could claim that their model of market socialism refuted the Mises-Hayek claim of the impossibility of calculation under socialism. The Lange-Lerner model forced Mises and Hayek to try to clarify their use of terms in the debate. The process of clarification continued into the 1940s with the result noted by Kirzner (1988, p. 1):

> [T]he Mises-Hayek position at the end of the forties was articulated in terms far different from those presented in the Misesian statements of the early twenties. Moreover, this more advanced Mises-Hayek position pointed beyond itself toward (and decisively helped generate) the more explicit Austrian statements of the seventies and the eighties.

My taxonomy of those "more explicit Austrian statements" includes thorough-going subjectivism; consistent methodological individualism; an emphasis on exchange, or catallactics, rather than on economizing and optimizing; focus on real-world market processes rather than on equilibrium states; and a view of economics as an "explanatory," rather than an "exact," science within which there is a severely circumscribed role for mathematics and statistics.

Subjectivism

The Marshallian synthesis claimed to have joined the marginalists' subjectivism of tastes on the demand side with the classicists' objectivism of real cost on the supply side to produce neoclassical price theory. However, Austrian subjectivism on the demand side is more radical than a mere subjectivism of tastes, and Austrians apply an equally extensive subjectivism to the cost side.

Austrians begin their analysis with the action axiom: People act purposefully, attempting to apply available means to the achievement of their many and varied ends. Their ends, or goals, or, to use neoclassical language, the arguments in their utility functions are both pecuniary and nonpecuniary. Altruism, prestige, power, knowledge, and wealth are recognized as common human ends. In short, the action axiom asserts that individuals attempt to do the best they

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can for themselves, as they see it, within the context of the constraints and opportunities they confront.

In illustrating how Austrian subjectivism is different from neoclassical subjectivism, we need to consider the different meanings attached to the marginal utility concept by neoclassical and Austrian economists. To the former, utility is a psychology-based notion of satisfaction. Utility from successive increments of a good is simply assumed to decline. To Austrians, however, utility is an action-based notion of subjectively evaluated significance. Declining marginal utility (significance) is a logical inference of two priors: the action axiom and the empirical postulate of scarcity. The significance that person A's mind attaches to a unit of X depends on the significance that A attaches to the end to which the unit of X is serviceable. Starting with zero units of X, when A receives a gift of one unit, he will devote that unit to what he regards as the most urgent use it will serve, because he knows he will never have all the X he would like to have. When A receives a second unit of X, it *must* be less significant to him because he has already carefully applied the first unit to the most urgent use to which X is serviceable.

Austrians make no attempt to explain which ends any particular person may choose to pursue. Whatever the ends, there is a pure logic of choice and action that always applies. Moreover, Austrians are quite comfortable with the fact that ends frequently change—sometimes exogenously and sometimes endogenously.

To an Austrian, the cost that person A weighs in the decision of whether to take action X is the subjective value that person A attaches to the most highly valued alternative action that cannot be undertaken if X is undertaken. The cost is the *value* the decisionmaker attaches to the sacrificed alternative, not the sacrificed alternative itself. A money measure of a cost is only an indirect representation of the cost. If the cost of action X is $100, that means merely that the actual cost that is weighed in the decision of whether to undertake X is the value attached to the most highly valued alternative use of the $100. The cost is not the $100 itself.

Cost and supply are no less subjective than wants and demand. Both ends and means are subjectively defined and evaluated by each economic actor.

Methodological Individualism

Carl Menger, the founder of the Austrian School, was the first economist to spell out the principle that Joseph Schumpeter was later to call methodological individualism (Menger [1883] 1963). Hayek ([1952] 1979, chap. 4) calls the principle the "compositive

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method." Modern Austrians, along with practitioners of the Chicago/UCLA variant of neoclassical price theory, base their analyses on this principle. Only individuals think, evaluate, plan, and act. Clubs, firms, states, nations, and publics are merely groups, or collectives, of individuals. These wholes do not think, evaluate, plan, and act independently of their parts. The only way to explain and understand what a group of people do is to explain and understand what the individual members of the group do. The public interest is merely the sum of the interests of the individuals who constitute the collective called the "public." According to Hayek ([1952] 1979, pp. 124–25):

> Words like *government* . . . stand not for single observable things but for structures of [interpersonal] relationships which can be described only by a schematic representation or "theory" of the persistent system of relationships between the ever-changing elements. These "wholes," in other words, do not exist for us apart from the theory by which we constitute them, apart from the mental technique by which we can reconstruct the connections between the observed elements and follow up the implications of this particular combination.

Exchange, Not Optimization

Ever since Lionel Robbins (1932) defined economics as the study of the allocation of given scarce means among given competing ends, the attention of most microeconomists has been on the identification of optimal values. Constrained maximization—the mathematics of the Lagrangian multiplier—has pride of place in most intermediate- and graduate-level price theory textbooks. Microeconomics and operations analysis have become almost indistinguishable.

Modern Austrians dissent from the Robbinsian view of economics. They ask, "To whom is the knowledge of the scarce means and the competing ends given?" Once the knowledge that is depicted in textbook budget constraints and indifference curves and in Lagrangian equations is known to a decisionmaker, the only thing that separates the decisionmaker from the correct identification of the optimum is arithmetic. Indeed, there is no human action left to examine.

To a modern Austrian, the much more interesting question is how do people acquire the knowledge that Robbins simply takes as given (Kirzner 1973, pp. 32–36). The answer to that question is that they come to discover bits and pieces of the relevant knowledge as they formulate and attempt to execute their plans to exchange with other people. Exchange with others in pursuit of broadly conceived personal gain is the quintessential economic action. It is the action on

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which economic analysis should focus its attention. The study of the exchange process and its implications is called, following Archbishop Whately, "catallactics" (Mises 1949, pp. 233–57; Hayek [1968a] 1978, pp. 181–84).

To a modern Austrian, economics is the study of the logical implications of the fact that people try to do the best they can for themselves, as they see it, within the context of the constraints and institutions they confront. Economics involves an examination of both intended and unintended consequences of human action. These consequences are logically inferred from the economists' understanding of the exchange relationship and its results, that is, its "spontaneous orders" (Hayek [1968a] 1978, pp. 181–84).

Market Process, Discovery, and Entrepreneurship

The knowledge involved in the process by which the pattern of production of goods and services becomes consistent with the pattern of individuals' wants exists nowhere in its entirety (Hayek 1945). Each economic actor possesses only pieces of the relevant knowledge—the pieces that pertain to him or her. No one—private citizen or government functionary—possesses all the pieces. Nor is it possible, because of the subjective nature of most relevant knowledge, for the highly scattered bits of knowledge to be gathered for a central authority or collectivist decisionmaker to use. Any individual's perceptions of the bits of knowledge pertinent to him or her may be inaccurate. *A fortiori,* any individual's perceptions regarding the bits of knowledge pertinent to others are almost always flawed.

Only through the market process can individuals discover relevant knowledge about the intentions, plans, and actions of others, as well as knowledge of objective real-world constraints. Much of the relevant knowledge is summarized and transmitted by movements of relative prices and the profit and loss possibilities such price movements imply. During this discovery process people constantly adapt their plans and actions to newly acquired knowledge. This adaptation of plans and actions leads to more and more plan-and-action coordination. Full consistency, or coordination, of the plans and actions of relevant economic actors is what Austrians mean by equilibrium.

The concept of equilibrium is used only as a reference point. It is the result of the market process, but Austrians are more concerned with the journey itself rather than the destination. In the real world, markets are usually in disequilibrium, and the actions of economic agents are best understood and evaluated in that context. For example, in an open market a monopoly that exists at the moment is usually the result of entrepreneurial alertness to some hitherto unnoticed

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profit opportunity. The economic profit earned today results in imitation of entrepreneurial success and the gradual dissolution of the monopoly as more and more people discover the relevant knowledge.

The key dynamic force in the Austrians' market-process analysis is entrepreneurship (Kirzner 1973). An entrepreneur is a person who is alert to the profit opportunities that are implicit in every disequilibrium situation. Whether through arbitrage, speculation, or innovation, an entrepreneur attempts to make economic profit by taking advantage of opportunities that others have failed to notice. The intent of the entrepreneur is to gain wealth. But successful entrepreneurship will be imitated, so the disequilibrium situations that gave rise to the profit opportunities will gradually be corrected. The desire to earn profits and to avoid losses fuels entrepreneurial alertness to disequilibrium and makes it inevitable that corrective pressures will be brought to bear in every disequilibrium situation.

That is not to say, however, that general equilibrium is ever achieved. As economic actors adapt to newly discovered knowledge in disequilibrium states, new instances of disequilibrium may emerge. Tastes may change, and new production and marketing processes may be tried as competitors try to stay ahead of each other (Lachmann 1986). In addition to these endogenous changes, there are exogenous changes in tastes, technologies, and resource availabilities that also imply that new instances of disequilibrium will emerge as old instances of disequilibrium are coordinated.

Methodology

Austrians may be considered quaint because of their focus on catallactics rather than optimization, but they are considered heretics because they insist that economics is not an exact science and that the methodology of exact sciences is not appropriate in economics. It is with regard to this issue that Milton Friedman, George Stigler, and most of the economics profession most vigorously dissent from Austrian analysis. Milton Friedman's famous 1953 essay on methodology claims that an economic theory should be judged purely on the basis of its usefulness. A theory is useful if it makes predictions that are confirmed (or at least are not falsified). Every worthwhile theory must have at least conceptually testable (falsifiable) implications. In practice the tests are most often statistical. A theory that fails the test must be discarded. A theory that passes the test is held until an alternative theory comes along that does a better job of predicting.

Austrians reject this instrumentalist view of economics because it is always possible for an economist to explain away any statistical

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results he or she does not like. Every theory of human action is laden with subjective components, and subjective variables cannot be quantified. Thus, for example, if a correctly executed regression study of a demand relationship indicated a positive own price elasticity of demand, the result could be easily dismissed. All the analyst would have to do is assert that a negatively sloped demand curve has shifted due to a change of taste. The positive slope could be explained away as an identification problem. Since tastes cannot be quantified, there is no way this convenient excuse can be falsified. In brief, the *ceteris paribus* conditions needed for econometric testing of theories are unavoidably elusive.

Since econometric testing cannot separate good models from bad models, care must be taken to build economic theories on realistic assumptions. Good analysis to a modern Austrian consists of correct chains of logical inference from self-evident propositions such as the action axiom and scarcity. The term "self-evident" refers to propositions that analysts and their audiences readily accept because the propositions seem, through introspection and common personal experience, to be correct. Introspection is a legitimate tool for gaining understanding in economics because the object of inquiry in economics is what humans do, and analysts and their audiences are human. Introspection is not a legitimate tool in the physical sciences because the objects of inquiry in physical sciences are quantifiable phenomena that are external to human analysts and their audiences (Mises 1962).

A logically correct model is not always applicable to a particular real-world situation. All statistical studies are numerical descriptions of history. As such, they may be useful to illustrate principles of economics by description of past applications of such principles and to discover phenomena to be explained by economic theory, but they can never be grounds for refuting such theory.

The neoclassical mainstream is wont to express assumptions and develop models by the manipulation of mathematical equations. Austrians claim that such exercises are redundant at best and often completely misrepresent the actual character and essence of human action. First and most important, the subject matter of economics is the choices, actions, and interactions of people. Objectively observable phenomena at time t, such as labor, capital, money, and other institutions, about which equations may conceivably be written, are the results of choices, actions, and interactions of people before time t. They matter at time t only insofar as people's subjective perceptions of them influence the choices that people then make. Human perceptions, purposes, and intentions cannot be mathematized in any

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meaningful way. Interpretation and understanding *(Verstehen)* of human action, not mathematical modeling, are the essential tools of economic inquiry (Mises 1949, pp. 47–58).

Mathematical economists arbitrarily use either specific mathematical forms or empty general functional forms as representatives of real people. They then dismiss the real people as redundant to their analyses. In Pareto's words, "The individual can disappear, providing he leaves us [a] photograph of his tastes" (quoted in Littlechild 1979, p. 13). But the photograph must leave out what ought to be to economists the most important characteristics of an individual: the person's purposes, intentions, interpretations, and perceptions. On the basis of this flawed photograph, the mathematical crank is then turned to generate either well-known results that are more easily generated by the pure logic of choice and action (such as notions of marginal equivalences) or results that are more complicated but irrelevant (such as, if we assume a person spends all his income, the weighted sum of an individual's income elasticities of demand for all goods in his utility function must be one).

The modern Austrian view of econometrics and mathematics is that they may, from time to time, be useful for purposes of illustration and/or clarification, but they are not the *sine qua non* of good economics. Most of what economists should be doing does not lend itself to the use of these tools and methods. Thus economists waste a lot of time trying to master such tools, given their relatively limited usefulness in economics. The effort spent in that endeavor would be better redirected to the further understanding of market processes and institutions.

The only predictions that economics is capable of generating are what Hayek (1968a) calls pattern predictions. That is, economic analysis, correctly understood, can predict the general directions of relationships between variables and general patterns of exchange interaction, but it can never make reliable quantitative or exact numerical predictions. Economists can explain patterns, but exact quantitative measurement of those patterns is beyond their reach.

Hayek (1952) uses the term "scientism" for the application of tools that are appropriate in the physical sciences to fields of inquiry such as in economics, where they are inappropriate. He is unequivocal in his condemnation of this common practice.

Buchanan's References to Austrians

Before we get to specific consideration of the common ground between Buchanan and the Austrians, we should note that, with the

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exception of the "priesthood" observation quoted above and a reference to "sin," which we will consider later, all of Buchanan's explicit references to Austrian economics and Austrian economists of which I am aware have been very favorable. For example, in a recent op-ed piece in the *Wall Street Journal* Buchanan (1986a), after outlining the real-world conditions that led in the 1970s to widespread disillusionment with the results of government intervention, wrote:

> The ideas of Prof. Hayek, Austrian economists, Armen Alchian, and the philosopher Robert Nozick, along with those of the public choice school helped make sense of these conditions. . . . The ideas that allowed such understandings and explanations came from the very scholars whose teachings had been scorned by the academic-intellectual mainstream in the 1960s, and these scholars came to be tolerated, respected, and, occasionally, honored by their peers.

In a paper originally published in Austria and later reprinted as the introductory essay to a volume of papers on public choice theory, Buchanan ([1979c] 1984, p. 11) wrote:

> Austria has a very proud and important heritage in the development of economic theory as I have here defined it, and I may say . . . that one of the most exciting and most encouraging developments within economics in the United States today is the observed resurgence of interest in "Austrian economics," and notably as among young research scholars.

Likewise, in a lecture delivered at a conference on subjectivist economics and later published in a collection of his papers, Buchanan ([1976] 1979a, pp. 90–91) wrote:

> I challenge any of you to take any issue of any economics journal and convince yourself, and me, that a randomly chosen paper will have a social productivity greater than zero. Most modern economists are simply doing what other economists are doing while living off a form of dole that will simply not stand critical scrutiny. . . . I think I know what I am doing, and I think that most of those who espouse a variant of Austrian subjectivist economics know what they are doing. And I think that our efforts are socially productive, highly so.

The Influence of Wicksell and Knight

Buchanan acknowledges Knut Wicksell and Frank Knight as the two dominant influences in the formation of his analytical perspectives on economics and the world of ideas. Two photographs—one of Knight and the other of Wicksell—are proudly placed on his office walls (Buchanan 1986b). Wicksell's "A New Principle of Just Taxa-

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tion" was the article that launched Buchanan's inquiries into the economics of politics (Buchanan 1987a). Knight was one of Buchanan's graduate school professors at the University of Chicago, the one that Buchanan calls "my professor." Knight was responsible for Buchanan's views on methodology and the primacy of subjectivism in economics (Buchanan 1969b, p. xi).

Although neither Wicksell nor Knight were Austrians, to a large extent the common ground between Buchanan and the Austrians can be traced to their influence. According to Hayek (1968b, p. 460), Wicksell's interest in, and perspectives on, the emergence and characteristics of the institutions of political economy were strongly influenced by Menger. Moreover, the views of Knight on methodology were very close to the views of modern Austrians.

In a scathing review of T. W. Hutchison's *The Significance and Basic Postulates of Economic Theory,* Knight condemns the positivist view that good methodology in economics is the same as good methodology in the physical sciences. And he does so in almost the same terms that modern Austrians use to make the same points. Knight ([1940] 1956, p. 151) wrote:

> Hutchison's methodology or philosophy of economics is of a sort that is particularly irritating to this reviewer, especially because it is so common, among people who "ought to know better." The author is a positivist, i.e., one of those who always think of "science" with a capital S (if they do not always write it that way) and use it in a context which conveys instructions pronounced in the awe-inspired tone chiefly familiar in public prayer. . . . The attempt to build a social science on these foundations suggests that the human race, and especially a large proportion of its "best minds," having at long last (a very long last) found out that the objects of nature are not like human beings—are not actuated by love and hate and caprice and contrariness, and subject to persuasion, cajolery, and threats—have logically inferred that human beings must be like natural objects, and so viewed by the seeker of knowledge about them.

Knight goes on in this extensive review to emphasize the significance of the fact that humans have purposes and that natural objects—the objects of the physical sciences—do not. With explicit reference to Wieser, Knight (p. 163) endorses introspection as a valuable tool of analysis in economics. He explores the implications of the subjective nature of the knowledge that is relevant to understanding human action, and he presents human action in a subjectively perceived means-ends framework (see especially p. 173). He states that predictions in economics must be limited to pattern predictions (p. 175),

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and he asserts that, unlike the natural sciences, economics requires "interpretive study *(verstehende Wissenschaft)*" (p. 177).

In an earlier methodological essay, "The Limitations of Scientific Method in Economics," Knight (1924) examines the nature and limitations of positivist scientific method and concludes that mathematics, statistics, and other positivist scientific tools have only very limited applicability in economics and other social sciences. For Knight ([1924] 1969, p. 147)

> [R]eal sociology and economics must be branches of literature as much as of science. In fact they need to be both, and commonly succeed in being neither. It is no wonder that these sciences are still in the stage of violent disagreement among their followers as to what they are and what they are about. The first step toward getting out of this slough, we suggest, is to recognize that man's relations with his fellow man are on a totally different footing from his relations with the objects of physical nature and to give up, except within recognized and rather narrow limits, the naive project of carrying over a technique which has been successful in the one set of problems and using it to solve another set of a categorically different kind.

There are two methodological conventions associated with the Chicago School: the empiricist instrumentalism of Friedman and Stigler, and the methodological pluralism of Knight. Buchanan takes his cues from the latter.

Common Ground in General Economics

Buchanan is best known for his pioneering work in public choice: the economic analysis of politics. The Buchanan and Tullock classic, *The Calculus of Consent* (1962), set the stage for what is now known as the public choice revolution. Two types of analyses come under the rubric of public choice: constitutional economics and operational public choice analysis. The former, Buchanan's main interest, is concerned with constitutional choice and constitutional reform. We will discuss constitutional economics in the penultimate section of this paper. The latter is concerned with political processes within existing constitutional regimes. Here the analysis, based on political entrepreneurship and focused on the anatomy of government failure, parallels Austrian market process theory.

In *The Calculus of Consent,* Buchanan and Tullock (1962, pp. 12–13) forthrightly declare their analysis to be based on methodological individualism. Along with modern Austrians they recognize that the only way to understand what any collective does is to understand the choices, plans, and actions of the individual members of the collec-

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tive. To understand what governments do within a given constitutional regime, it is necessary to understand the plans and actions of the politicians and bureaucrats who wield governmental authority within that regime. And the way that understanding is pursued in public choice theory is to begin with the assumption that each person pursues broadly conceived self-interest. (Austrians would say that each person acts in accordance with the action axiom.) All people, whether employed in the government sector or the market sector, attempt to do the best they can for themselves, as they see it, within the set of constraints they confront. People who make different decisions in the government sector from those they would make in the market sector do so only because of the differences in incentives they confront in the two sectors—that is, only because institutional constraints are different in the government than in the market sector (see, for example, Buchanan 1987a, pp. 245–46).

In his presidential address to the Southern Economic Association, Buchanan ([1963] 1979a) explained why he thinks that the conventional focus of economists on constrained maximization or optimization is misplaced. The famous Robbinsian definition of economics "served to retard" progress in economic understanding (p. 20). The Robbinsian formulation pays no attention to the important task of "identifying properly the entity for whom the defined economic problem exists" (p. 21). He takes Friedman to task for his holistic characterization of economics as the "study of how a particular society solves its economic problem" (p. 21). He says he wants economists "to concentrate on exchange rather than on choice" (p. 26). If he could start all over again, Buchanan would recommend that the word "economics" be replaced with the word "catallactics" or "symbiotics" to emphasize that the proper objects of analysis are the implications of individuals seeking to further their broadly defined interests through mutually beneficial relationships with other individuals (p. 27).

In words that Mises and Hayek must have applauded and that Kirzner (1965) explicitly acclaimed, Buchanan (p. 29) called for a redirection of attention away from the comparative statics of perfect competition and monopoly and of Walrasian general equilibrium toward market process:

> A market is not competitive by assumption or by construction. A market *becomes* competitive and competitive rules *come to be* established as institutions emerge to place limits on behavioral patterns. It is this *becoming* process, brought about by the continuous pressure of human behavior in exchange, that is the central part of our discipline, if we have one, not the dry rot of postulated

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> perfection. A solution to a general-equilibrium set of equations is not predetermined by exogenously determined rules. A general solution, if there is one, *emerges* as a result of a whole network of evolving exchanges, bargains, trades, side payments, agreements, contracts which, finally at some point, ceases to renew itself. At each stage in this evolution toward solution there are *gains* to be made, there are exchanges possible, and this being true, the direction of movement is modified.

Buchanan (pp. 30–31) clearly shares the views of Hayek on institutions, such as the market, as spontaneous orders that are the result of human action rather than human design:

> The market or market organization is not a *means* toward the accomplishment of anything. It is, instead, the institutional embodiment of the voluntary exchange processes that are entered into by individuals in their several capacities. . . . It is a setting, an arena, in which we, as economists, as theorists (as onlookers), observe men attempting to accomplish their own purposes, whatever these may be. And it is about these attempts that our basic theory is exclusively concerned if we would only recognize it as such.

In "General Implications of Subjectivism in Economics," Buchanan ([1976] 1979a, p. 84) endorses Hayek's criticism of scientism and recognizes that Knight and Hayek share common methodological ground:

> Hayek and Knight were sharply critical of any attempts to convert economics into a discipline analogous to a natural science. Economics is, or can be, scientific in a sense that is, I think, unique. The principle of spontaneous order is a scientific principle, in that it can readily be divorced from normative content. Unless we stay within the exchange paradigm, however, we lose the legitimately scientific principle, and, instead, launch off into the scientistic implications that emerge from the maximization paradigm.

"Is Economics the Science of Choice?" was Buchanan's (1969a) contribution to a Hayek *Festschrift*. It is his most systematic consideration of methodological problems. He opens the paper with a quote from Hayek's "Economics and Knowledge" (1937), and, adopting some of Hayek's insights in that essay, he goes on to divide economic theory into three categories: the logic of economic choice, the abstract science of economic behavior, and the predictive science of economic behavior.

The Logic of Economic Choice

The first category consists of purely a priori reasoning based on the notion that individuals attempt to pursue their broadly conceived self-interests. This category is what Mises regarded as the central

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domain of economic theory. Since what is in a person's interest (the goods in his utility function) is wholly undefined, the logical inferences obtained in this category are "empirically empty." That is, the inferences are not conceptually refutable. Any observed action can be interpreted to be in the actor's interest. But Buchanan ([1969a] 1979a, pp. 41–42) tells us:

> [E]mpirical emptiness should not . . . be equated with uselessness. . . . Commencing with the fact that choosers choose and that they do so under constraints which include the behavior of others, the economist can begin to make meaningful statements about the results that emerge from the interaction among several choosers. Certain "laws" can be deduced, even if conceptually refutable hypotheses cannot be derived. . . . The "law" of choice states only that the individual decision-maker will select that alternative that stands highest on his preference ordering. Defined in purely logical terms, this produces the "law of demand." In this way, trade or exchange can be explained, even in some of its most complex varieties. Characteristics of equilibrium positions can be derived, these being defined in terms of the coordination between expected and realized plans of the separate decision-makers.

In "Economics and Knowledge," Hayek (1937), too, discussed the limitations of what he called the "pure logic of choice" and explained what he considered to be the only meaningful notion of equilibrium: the interpersonal coordination of plans and actions. Actually, Hayek applied the term "pure logic of choice" to two different types of analyses: first, to the pure a priorism of Mises (Buchanan's first category) and second, to models wherein the utility function and constraints are fully specified as mathematical equations or curves in Cartesian planes. In the latter (standard neoclassical) case there is no real choice at all. With the utility function and constraints fully specified, an external observer can, with certainty, predict the outcome. All that separates the observer (and the "chooser") from the answer is mere calculation or computation.

Hayek ([1937] 1948, pp. 44–45) states that while the pure logic of choice, in the first sense, is sufficient to understand the nature of equilibrium, the question of whether there is in markets a tendency toward equilibrium is an empirical one.

To answer that question, the economist must go beyond the pure logic of choice to examine the processes by which agents acquire the knowledge they must possess for plans to be fully coordinated.

The Abstract Science of Economic Behavior

And that takes us into the realm of Buchanan's second category of economic theory: the abstract science of economic behavior. Here

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the content of self-interest is specified, but the analysis remains qualitative rather than quantitative. Conceptually refutable pattern predictions can be made. As Buchanan ([1969a] 1979a, p. 45) states:

> In the pure logic of choice, the arguments in the utility function are not identified: "goods" and "bads" are unknown to the external observer. In any science of economic behavior, the goods must be classified as such. But under minimally restricted utility functions, specific trade-offs among these may remain internal to the acting units. The individual chooses in the sense that his selection from among several desirable alternatives remains unpredictable to the observer. What we have here is an extremely limited "science" of behavior combined with an extensive "logic" of genuine choice. We move beyond this essentially mixed framework when the trade-offs are more fully specified. Additional "laws of behavior" can then be derived; and, more important, predictions can be made about the results of the interaction process.

Buchanan places most of his own economic theorizing in this second category. I think that Kirzner's analysis of the entrepreneurial market process also falls in this category (Kirzner 1973, 1979, 1985). The entrepreneur is the key actor in that analysis. In neoclassical language, Kirzner specifies pecuniary profit as a good and pecuniary loss as a bad in the entrepreneurs' utility functions. Because of that "restriction" on utility functions, Kirzner is able to make conceptually refutable pattern predictions, for example, the existence of a strong tendency to equilibrium in the market process. Every instance of plan discoordination based on lack of relevant knowledge is a potential profit opportunity for an entrepreneur who notices the situation and acts on it. As the entrepreneur acts, others imitate the profitable actions and thus the discoordination (disequilibrium) diminishes. To justify his confidence that the knowledge necessary for interpersonal plan coordination will be discovered by those who need to discover it, Kirzner (1979, chap. 2) relies on the propensity of entrepreneurs to notice that which is in their interest to notice.

Curiously, Kirzner (1976a, pp. 46–47) interpreted Buchanan's contribution to the Hayek *Festschrift* to be a negative appraisal of Austrian methodology:

> Critics of Austrian methodology often argue that since praxeology [Mises' pure a priorism] deals with unobservables, it is inherently incapable of telling us anything scientific about observables. The latest (and perhaps the clearest and most sympathetic) statement of this argument was by James Buchanan, in his contribution to the Hayek *Festschrift* when he drew attention to the distinction between (1) the logic of choice (what he called the abstract science of economic behavior) and (2) the predictive science of human behavior.

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> Buchanan argued that if we treat economics as the logic of choice, it cannot in principle lead to refutable hypotheses because no particular preference ordering has been specified, and to that extent it cannot tell us anything about the real world.
>
> In answer to Buchanan, our discussion indicates that the truth is the other way around. We are not only able to say something about the real world; we are also able to say a great deal about a large and important area of human experience about which other disciplines are necessarily silent—the realm of purpose.

I think Kirzner misunderstood Buchanan in the above. Perhaps because he was used to criticism by economists who thought that the worst thing you could say about an analysis was that it was not conceptually refutable or that it was empirically empty, he simply assumed that Buchanan had the same attitude. But, as we have seen, to Buchanan the term "empirically empty" is not a term of opprobrium, and he does recognize that useful conclusions can emerge from the pure logic of choice. Moreover, Buchanan does not equate the pure logic of choice with the abstract science of economic behavior. The latter is his second category, and he places his own work therein. I claim that much of Kirzner's work is also in this category. Finally, in light of Buchanan's recognition, quoted above from his 1963 presidential address, that "our basic theory is exclusively concerned" with "men attempting to accomplish their own purposes, whatever these may be," Kirzner's answer to Buchanan is not appropriate.

The Predictive Science of Economic Behavior

Buchanan's third category of economic theory—the predictive science of economic behavior—is economics as an exact science that attempts to make quantitative predictions based on full specifications of objective functions and constraints and on statistical data analyses. Here, according to Buchanan ([1969a] 1979a, p. 49), the economist goes beyond conceptual refutability to actual "empirical testing against real-world observations." But, in Buchanan's view, actual quantitative empirical testing is next to impossible, and in the end it cannot ever refute the general laws of the first two categories.

In the concluding paragraph of this important paper Buchanan (p. 63) once again explicitly aligns himself with Hayekian methodology:

> The critical methodological oversight was that which Hayek emphasized, with clarity but to little avail, in several of his fundamental papers in the late 1930s and early 1940s. The failure of economists to recognize that the sense data upon which individuals actually choose in either market or political choice structures are dimensionally distinct from any data that can be objectively called upon

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> by external observers led directly to the methodological chaos that currently exists. . . . Few economists are wholly free of the confusions that I have discussed. For myself, I advance no claim that my own thinking has yet fully rid itself of the paradigms of neoclassical orthodoxy.

In his foreword to Gordon Tullock's *The Politics of Bureaucracy,* Buchanan ([1965] 1979a, p. 171) indicates his agreement with the Austrians on the question of the usefulness of introspection in the sciences of human action:

> [H]ypotheses about individual behavior are . . . important in Tullock's analysis, and the absence of external variables that are subject to quantification makes the refutation of positive hypotheses difficult in the extreme. For assistance here, Tullock introduces a simple, but neglected, method. He asks the reader whether or not his own experience leads him to accept or to reject the hypotheses concerning the behavior of the politician in bureaucracy.

Evidence on Buchanan's attitude toward the use of mathematics and statistics to make economics seem like an exact, predictive science can be found in several of his papers. For example, in his essay "Politics without Romance," Buchanan ([1979c] 1984, p. 11) writes:

> Ecclesiastes tells us that there is nothing new under the sun, and in a genuine sense, such a claim is surely correct, and especially in the so-called social sciences. (I am reminded of this every week when I see my mathematically inclined younger colleagues in economics rediscovering almost every wheel that older economists have ever talked about.)

In "General Implications of Subjectivism in Economics," Buchanan ([1976] 1979a, p. 88) writes:

> The young and aspiring economist who becomes the expert empiricist has necessarily sacrificed training time in learning more about the process to which his highly polished technical tools are to be applied. These gaps in the training of modern economists are beginning to show up in many forms, not the least of which is the deadly dullness that dominates whole departments in many universities and colleges.

In the same paper he states that there may be some legitimate uses of mathematics, such as aiding the understanding of the relationships between parts of an analysis, so long as it is kept in its proper place as a tool and is not permitted to define the scope of what is considered good economics (p. 89).

In "Retrospect and Prospect," Buchanan (1979a, p. 280) penned the following passionate condemnation of abuse of statistics and mathematics in economics:

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> I see a continuing erosion of the intellectual (and social) capital that was accumulated by "political economy" in its finest hours. I look at young colleagues trained to master regression routines who are totally uninterested in, and incompetent to examine, elementary economic propositions. The graduate schools attract and turn out dullards, and the exciting young minds turn increasingly to law, to philosophy, and to the commune. For those among these minds that are trapped into economics and that may, with effort, partially finesse the empiricist rage, I see them compelled to utilize their considerable mental potentials, resolving the escapist puzzles of modern mathematics.

It is not surprising, then, to note that Buchanan "makes little use of mathematics, and in none of his publications, not even one, has he undertaken statistical estimates" (Christainsen 1988, p. 11).

Buchanan's Summary Statements

Buchanan's 1979 essay "Retrospect and Prospect" consists mainly of an enumerated list of eight "cryptic statements or assertions" that Buchanan uses to restate some of the main points of the earlier essays and "to suggest possible directions that seem ripe for further inquiry" (Buchanan 1979a, p. 280). In order, his statements concern methodology, limited usefulness of equilibrium analysis, entrepreneurship, exchange over maximization as the basis of economics, institutions, economics as politics, spontaneous order, and mathematics as "excess baggage." Only the sixth statement, economics as politics, is not obviously Austrianesque. The others could have been written by a modern Austrian as forceful summary statements of much of what is distinctive about Austrian economics. What follows are brief excerpts from each of the remaining seven statements (Buchanan 1979a, pp. 280–82).

> *On Methodology*
> The problems in economics are not amenable to scientific solutions [in the sense of "physical-biological" sciences], and progress is not to be expected by pushing back the frontiers of science. The strictures of both Frank Knight and F. A. Hayek against scientism require repeated repetition.
>
> *On Equilibrium*
> The equilibrium constructions are useful only if their limitations are appreciated. These allow us to discuss directions of adjustment rather than states of potential attainability.
>
> *On Entrepreneurship*
> Increasingly, I have come to the view that the role of entrepreneurship has been the most neglected area of economic inquiry, with significant normative implications for the general understanding of how the whole economy works.

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On Exchange versus Maximization
The behavioral paradigm central to economics is that of the trader whose Smithean propensity to truck and barter locates and creates opportunities for mutual gains. . . . [T]he maximization paradigm is the fatal methodological flaw in modern economics.

On Institutions
Choices are made by actors, by traders, constrained within specifically determined "laws and institutions," a central emphasis of Adam Smith and one that has been lost to modern minds. Institutions matter.

On Spontaneous Order
As a discipline or area of inquiry, economics has social value in offering an understanding of the principle of order emergent from decentralized processes, of spontaneous coordination. (The market is the classic example.) Such an understanding is necessarily prior to an informed decision on alternative forms of social order.

On Mathematics
[D]espite the attempts by modern scholars to cloak their own insecurity in complexity, the central principles of economics are elementary. We do not need the excess baggage of modern mathematics to grasp and to convey the basic wisdom that Adam Smith discovered and that his successors emphasized.

Evaluating Economic Policy

Buchanan and the Austrians also share common ground on the means by which it is legitimate for economists to come to normative conclusions regarding various governmental policies. Mises was often accused of carelessly mixing normative judgments with positive analysis. In one place Buchanan ([1969c] 1979a, p. 77) writes: "It is as much of a sin for von Mises or his followers to decry government failure on the basis of their empirically empty model as it is for Bator to neglect governmental failure in his extremely restricted model."

However, as Kirzner (1976b, p. 82) explains, Mises' negative assessments concerning governmental economic policies were based on positive conclusions of his pure logic of choice. Those conclusions, Mises taught, demonstrate that the outcomes of proposed governmental economic policies will almost always be different from the outcomes that the protagonists of the policies claim they intend. This is precisely the view adopted by Buchanan ([1977] 1979a, p. 180) for the use of public choice theory normatively to evaluate government policy:

> Public-choice analysts have no business telling President Carter or Jim Schlesinger just what energy policy "ought" to be proposed. Nor do they even have any role in delineating what would be an

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> "ideal" policy mix. Positive public-choice analysts can tell us, however, and within broad limits, roughly the sort of energy policy that is likely to emerge from the collective decision-making institutions that we observe in operation. This is, and has been, our major contribution. And our predictions can tell us that the emergent results are unlikely to bear much relationship to those results desired, even by those who make the final normative decision as to the "ought."

Common Ground in Cost Theory

Hayek ([1952] 1979, p. 52) wrote, "It is probably no exaggeration to say that every important advance in economic theory during the last hundred years was a further step in the consistent application of subjectivism." That is certainly the case with cost theory. There is no notion more basic in economics than that individuals make choices on the basis of comparisons of costs and benefits. The costs that influence choice, the costs on which economists should focus, are as thoroughly subjective as the benefits that influence choice. Buchanan and the Austrians understand this better than most other economists.

In *Cost and Choice*, Buchanan (1969b, pp. 12–15) even parts company with Knight on the issue of subjectivism in costs. Knight's conception of opportunity cost was the market value of alternative product. But, as Buchanan and the Austrians recognize, cost, thus defined, "has no connection with choice at all."

Buchanan adopts such a thoroughly subjectivist view of cost that Leland Yeager (1987), the Ludwig von Mises Distinguished Professor of Economics at Auburn University, calls his views "exaggerations." Before we evaluate Yeager's objection to Buchanan's subjectivist understanding of cost, however, we must see what Buchanan has to say about the subject.

Buchanan (1969b) identifies his subjectivist views on cost with those developed in the 1930s and 1940s by Hayek and Robbins at the London School of Economics, and extended in the mid-1940s and 1950s by G. F. Thirlby. Although he calls his views the LSE cost tradition, he writes, "Latter-day Austrians especially may suggest, with some justification, that the theory developed is properly labeled 'Austrian' " (p. ix). He goes on to say, however, as Kirzner (1988) also says, that early Austrian attempts to explain cost were so unsatisfactory that they contributed to some of the misdirections and misunderstandings embodied in orthodox cost theory. In Buchanan's view, misstatements of subjectivist cost by Mises and Hayek early in the socialist calculation debate provided Lange and Lerner with grounds for claiming that market socialism solves the calculation problem

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(pp. 22–23, 26). Clarifications of the subjectivist cost theory were made by non-Austrians, such as Thirlby and Robbins, as well as Austrians, such as Mises and Hayek.

Buchanan (1969b, pp. 44–45) makes a distinction between choice-influencing and choice-influenced costs. The former are subjective and enter into the process of making choices. The latter are objectively observable accounting costs that are the result of the actions taken on the basis of choice-influencing costs. Money measures of cost of production, for example, depend on prices of labor, capital services, materials, and supplies. These prices emerge out of the market processes of production and exchange. But the actions of people in production and exchange are based on the choices those people make, and those choices are influenced by subjective evaluations attached to sacrificed alternatives.

In his development of the distinction between subjective choice-influencing costs and objectively measurable money costs, Buchanan (1969b, p. 49) adopts the Austrian views that what is important in economics is the process by which markets in disequilibrium are nudged toward equilibrium and that the special conditions that exist in equilibrium have little practical value:

> If the whole economy is not operating at full competitive equilibrium, profits-losses may occur and, hence, observed outlays cannot be taken to reflect foregone opportunities of the actual decision-takers in any general setting. In full equilibrium, on the other hand, observed outlays directly represent the maximum contribution of resources in different uses. Therefore, to the extent that decision-takers behave economically, the observed outlays reflect genuine "opportunity costs," even if somewhat indirectly. . . . [T]he whole purpose of the economic theory in which cost is relevant is to demonstrate how choices made in nonequilibrium settings will generate shifts toward equilibrium. And choices in nonequilibrium must be informed by opportunity costs that cannot, even indirectly, be represented by measured outlays.

Buchanan (1969b, p. 43) lists six implications of a choice-based conception of cost:

> (1) Most importantly, cost must be borne exclusively by the decision-maker; it is not possible for cost to be shifted to or imposed on others. (2) Cost is subjective; it exists in the mind of the decision-maker and nowhere else. (3) Cost is based on anticipations; it is necessarily a forward-looking or *ex ante* concept. (4) Cost can never be realized because of the fact of choice itself: that which is given up cannot be enjoyed. (5) Cost cannot be measured by someone other than the decision-maker because there is no way that subjective experience can be directly observed. (6) Finally, cost can be dated at the moment of decision or choice.

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Yeager (1987) takes strong exception to the first two implications. He says that externalities such as air pollution clearly represent an imposition of cost on others, and dirty air is not subjective. But these six implications refer to choice-influencing, not choice-influenced, cost. Externalities, by definition, do not influence the choices made by the person whose actions result in the spillovers. Externalities are choice-influenced cost. Moreover, the choice-influenced cost here is not the dirty air; it is the sufferers' subjective evaluations of the dirty air. Yeager's objection simply misses the point.

Kirzner (1973, ch. 5) uses the choice-influencing notion of cost (he does not use that language) to clarify the meaning of long-run and short-run cost and to establish that "a market process which is seen as competitive from one point of view may turn out to be monopolistic when evaluated from a different vantage point" (p. 198). In so doing, he is implicitly employing Buchanan's third and sixth implications.

Kirzner's concern is with an entrepreneurial decision to acquire all the available supply of a resource that is needed to produce a product. At the point of decision, the market process is competitive because others could attempt the same thing. After the acquisition of the resource supplies, the subsequent market process would have to be considered monopolistic because the earlier competitive decision resulted in a closed market. Were the entrepreneurial actions competitive or monopolistic? The answer depends on the perspective from which the question is examined.

Common Ground in Political Economy

Buchanan is a contractarian in constitutional choice. In *The Limits of Liberty* (1975) and with Geoffrey Brennan in the *The Reason of Rules* (1985), he spells out his views on the social contract idea of politics as exchange. The basic behavioral assumption is what Austrians would call the action axiom. The methodological perspective is individualistic. The purpose of the analysis is first of all to justify the existence of a constitutionally circumscribed state and then to discern what sort of constitutional rules could conceivably receive unanimous consent at the stage of constitutional choice. The basic tool of analysis is conjectural history—the construction of a story of how a proper constitutional order logically could have emerged. The point is not to explain how actual governments emerged in history; rather, it is to justify a particular form of state on the grounds that it could logically have emerged as a unanimously approved social contract among self-interested people.

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Buchanan adopts the unanimity principle from Wicksell (1896). The importance of unanimity as a benchmark is that, because of the subjectivity of personal costs and benefits attached to each collective action, it is impossible, without unanimous consent, ever to determine whether any collective action is genuinely in the public interest. In collective decisions the counterpart to mutual consent in market exchange is unanimity. Buchanan modifies the Wicksellian principle by transferring it to the constitutional stage of collective choice.

Buchanan's contractarian approach is useful today because it provides a way of normatively evaluating proposed constitutional revisions. Clearly, in the United States in the 1980s no actual constitutional change would receive unanimous approval. There are simply too many vested interests in the status quo. Nevertheless, the political economist can use the unanimity criterion as a benchmark normatively to evaluate existing constitutional provisions and proposed constitutional changes. If a plausible argument can be made that, starting from ground zero with each person making evaluations under a "veil of uncertainty" as to his or her specific interests in an indefinite number of future applications of the constitutional rule, a proposed constitutional change would receive unanimous consent, the rule should be adopted. If it is clear that, in that artificial setting, the rule could not receive unanimous consent, the rule should not be adopted. Accordingly Buchanan (1987a, p. 248) writes:

> The political economist who operates from within the Wicksellian research program, as modified, and who seeks to offer normative advice must, of necessity, concentrate on the process or structure within which political decisions are observed to be made. Existing constitutions, or structures of rules, are the subject of critical scrutiny. The conjectural question becomes: Could these rules have emerged from agreement by participants in an authentic constitutional convention?

It is crucial to see that Buchanan applies the unanimity principle at the stage of constitutional choice—the stage of choosing the rules by which the citizens of the political economy will live. The principle need not apply at the stage of postconstitutional, day-to-day operations of the government set up by the constitution. For example, at the constitutional stage people could unanimously agree that postconstitutional, annual national-defense budgets would be determined by majority voting among elected representatives. A losing minority at the postconstitutional stage could not then, according to Buchanan, legitimately claim that they were being coerced by the victorious majority.

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Buchanan has not spelled out the details of what he thinks a constitution constructed on the unanimity principle would contain. His concern has been to understand and exposit the process by which such a constitution could be identified. He thinks that the postconstitutional political process in the United States has produced some disastrous results, and he thinks that it is time in America for scholars to do some serious thinking about constitutional change. Setting constitutional choice in the context of an initial zero-government state of nature with all self-interested participants making decisions under a veil of uncertainty makes unanimity conceivable. If the participants do not know their relative positions in an indefinite number of future applications of the constitutional rules, they will, Buchanan conjectures, adopt process rules that are perceived to be "fair"—ones that promote equality of opportunity (Brennan and Buchanan 1985).

The unanimity principle is applied routinely in Paretian welfare economics. The earlier Pigouvian welfare economics failed because of the incomparability of subjective costs and benefits. Individual benefits and costs cannot be measured on any objective scale that would permit interpersonal comparisons of gains and losses; hence, the formalistic application of Pigouvian marginal equivalences is an empty mind game. In Paretian welfare economics, a collective policy is said to be in the interest of the collective if the policy benefits at least one person without making anyone worse off. The evidence for such Pareto efficient changes is the consent of the individuals involved. The impossibility of a "social welfare function" (Arrow 1951) makes it impossible to make nonarbitrary collective choices from the set of Pareto optimal outcomes. In brief, because of the subjectivity of all relevant costs and benefits, welfare economics is reduced to the search for measures that receive unanimous consent.

Murray Rothbard ([1956] 1977, p. 28), an Austrian, was one of the first explicitly to call for the application of the Paretian unanimity rule to an analysis of the state itself:

> Until quite recently, welfare economics has never analyzed the role of the State. Indeed, economics in general has never devoted much attention to this fundamental problem. Specific problems, such as public finance or price controls, have been investigated, but the State itself has been a shadowy figure in the economic literature. Usually, it has vaguely been considered as representing "society" or "the public" in some way. "Society," however, is not a real entity; it is only a convenient shorthand term for an array of all existing individuals. The largely unexplored area of the State and State actions, however, can be analyzed with the powerful tools of Dem-

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> onstrated Preference [actual choices made by people in real choice settings] and the Unanimity Rule.

Although Buchanan and Tullock did not refer to this statement by Rothbard in *The Calculus of Consent,* it could well be taken as a prologue to what later emerged as public choice theory.

But it is with Hayek that Buchanan shares the most common ground. Indeed, I think that Buchanan has strongly influenced Hayek's ideas about an ideal constitution. Buchanan frequently refers to Hayek's work. In "Public Choice and Ideology," Buchanan ([1978] 1979a, pp. 274–75) explicitly acknowledges that Hayek's political economy is consistent with, but significantly different from, his own. Hayek's views are "Panglossian" because, according to Buchanan, Hayek expresses confidence that efficient institutions inevitably emerge from the on-going process of political evolution. Thus the best thing to do is avoid interfering with the process. The institutions we have are the best we can have at the moment. Buchanan calls his own views "meliorist" because he recognizes a need to construct constitutions and rules to constrain the self-seeking propensities of man.

However, when it comes to design of constitutions, Hayek has more in common with Buchanan than the Panglossian/meliorist distinction implies. It is not true that Hayek thinks that existing governmental institutions are the best we can do. For example, in "Economic Freedom and Representative Government," Hayek ([1973] 1978, p. 107) explicitly states that majoritarian democracy has gotten out of hand and has planted "the seeds of destruction" of the market order.

While Hayek has consistently taken an anti-constructivist, evolutionary approach to nongovernmental social institutions, he has not done so when it comes to governmental institutions. His insights on the division of knowledge imply that it is impossible for one or a few persons to construct social institutions that embody the same amount of knowledge and understanding that is embodied in spontaneously formed social institutions. All relevant bits of knowledge and understanding are brought to bear in the process by which social institutions spontaneously emerge simply because all individuals, with their own fragmented, subjectively held knowledge, play a part in the process. In Hayek's words ([1937] 1948, p. 54), understanding the advantages of spontaneous orders over constructivist designs requires acknowledgment that "the combination[s] of fragments of knowledge existing in different minds bring about results which, if they were to be brought about deliberately, would require a knowledge on the part of the directing mind which no single person can possess."

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But when it comes to governments, Hayek recognizes the negative sum consequences of political entrepreneurship under existing constitutional regimes. He also recognizes, on public choice grounds, that minorities can rule in a majoritarian democracy. More to the point, he proposes a constructivist constitutional solution, "demarchy," and states that if his constructivist design were tried by any country, the resulting prosperity would create a consensus that demarchy ought to be imitated elsewhere. Approximate unanimity would be the result of successful initial trials.

Hayek (1979) lays out the details of demarchy in volume 3 of *Law, Legislation, and Liberty*. He recognizes, as does Buchanan, that there are really two levels of collective choice. There is the level of the general rules of just conduct—constitutional process rules that are intended to apply to every individual situation irrespective of the people and interests involved—and there is the level of the routine operations of government. He proposes two assemblies of representatives to handle the two different activities. The "legislative assembly" would be responsible for discovering, articulating, and applying the gradually evolving universal rules of just conduct. It would also specify limits on what the other assembly, the "governmental assembly," may do and how it must go about its authorized tasks. The governmental assembly would be responsible for providing public goods such as national defense, roads, schools, and dams. It would decide which projects to adopt out of the permissible set and how much to spend on them. But the legislative assembly would determine the tax system. Spenders would have no power to alter the forms of taxation. Spending lobbyists could no longer shift and disguise the tax burden.

The governmental assembly could be set up as present legislatures are, but the legislative assembly would consist of men and women between 45 and 60 years old, serving 15-year terms. Although no member could run for reelection, upon completion of their 15-year terms members would be guaranteed "honorific but neutral positions as lay judges" so they would not have to return to employment in the market sector. Each year, the 45-year-old age cohort of the electorate would elect one of its own for a 15-year term. Thus each citizen would vote only once for a representative to the legislative assembly. Those running for election would be people who had already proven their leadership qualities in the market sector. People who had served in the governmental assembly would be ineligible to serve in the legislative assembly.

Good government is limited government. To keep government limited, Hayek (1979, chap. 16) attempts, in his "model constitution,"

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to insulate the members of the legislative assembly from the temptations and pressures of the rent-seeking, negative-sum political entrepreneurship that characterizes present majoritarian democracies.

Buchanan does not offer a model constitution, but he and Hayek agree on the existence and nature of two separate levels of governmental activity. They agree that limited government includes more than just the protective and judicial services of the classical night watchman state. It includes what Buchanan calls the "productive state"—the provision of a limited number of genuine, but nonprotective, public goods such as schools, general-access roads, and mosquito abatement. They also agree that the provision of nonprotective public goods is a slippery slope that easily leads to excessive government. Hayek tries to avoid the hazards of the slippery slope by separating the provision of public goods from the determination of permissible government activities. Buchanan is less explicit on how to avoid the danger. Presumably constitutional revision under the conceptual unanimity principle would include such safeguards.

Conclusion

Austrian economics occupies the middle ground between the zero information cost or rational expectations view of the neoclassical orthodoxy that says markets are always at or near equilibrium and the Shackelian view that we can never know what we have to know for equilibrium, so equilibrium is impossible (Garrison 1982). Public choice occupies the middle ground between the view that government is "pure conflict" and the view that government is the embodiment of "truth and light" (Buchanan 1987b, p. 311). In my view, real solutions to real problems can be found only in such middle ground.

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The Use of Labels in Doctrinal History: Comment on Baird

Israel M. Kirzner

In his lively and provocative paper, Charles Baird seeks to establish that "the economics of James Buchanan has much in common with modern Austrian economics." I am prepared to agree that Baird has succeeded—almost completely—in proving the validity of his claim. Although one may wish to quibble on matters of detail, there can be little doubt that Baird has learnedly and skillfully demonstrated that Buchanan shares many if not all of the fundamental economic insights generally held to be characteristic of the contemporary Austrian revival. Some questions, however, do remain, especially those pertaining to Baird's section on political economy. In particular, is there really an "Austrian position" on the appropriate constitution for government? And are Hayek's and Buchanan's views on this question part of their economics?

Beyond congratulating Baird on his sensitive and insightful survey of Austrian ideas, the reader must surely be inclined to wonder what the author wishes us to conclude from the demonstrated validity of his claim. Is it intended that one's judgment on who are the modern Austrians be revised to include so eminent a scholar as Buchanan? Or is it rather intended that card-carrying Austrians be persuaded to dissolve what others have seen as an overly self-conscious "priesthood," and even to discontinue using the label "Austrian," (since what was held to be characteristically Austrian has been shown now to be part of the well-understood doctrinal equipment of a prominent non-Austrian)?

At the very least Baird's paper is to be appreciated as a provocation to reconsider the use of traditional labels in doctrinal history. This issue is by no means a new one for Austrian economics. About a half-century ago, Austrians such as Mises, Hayek, and Machlup all main-

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tained that important Austrian insights had been successfully absorbed into the mainstream by the early 1930s, suggesting that a continued separate identity for Austrian economics was no longer required. Nevertheless, Mises and Hayek decisively distanced themselves from such a suggestion, while Machlup emphatically affirmed it to the end of his life.[1] What Baird has now done is to force present-day Austrians to reconsider, in the light of the economics of 1989, the legitimacy and expediency of their self-assumed doctrinal label.

The Uses of Doctrinal Labels

There seem to be several separate justifications for the use of doctrinal labels. First, such labels may have value in terms of the history of ideas. The history of economic thought *has* singled out an Austrian tradition. History does have its claims, and one cannot appreciate the work of Mises, say, without recognizing the provenance of his thought in the Menger-Böhm-Bawerk tradition within which he was trained. Perhaps, then, Baird is suggesting that this history-of-ideas basis for the Austrian label no longer pertains, since what was distinctive in that tradition has now been absorbed into the profession at large. Second, doctrinal labels may have strategic or semantic value in accentuating the uniqueness of a set of scientific insights, in arousing professional interest in them, or in identifying them in easily recognizable fashion to the world at large. Perhaps, then, Baird's paper is to be read as suggesting that such use of the Austrian label is, within today's economics, now confusing and inappropriate.

But clearly, discontinuance of the Austrian label on either of these two grounds would require more than a demonstration that a single prominent economist—even one so eminent as Buchanan—shares basic insights and views with the Austrians. Baird is careful, it appears, not to claim that the public choice school in general shares these Austrian views (although at certain spots he seems perilously close to implying this). When Lionel Robbins (1933, p. xv) noted that Philip Wicksteed's place in the history of economic thought was alongside that occupied by the Austrians, he was not placing Wicksteed in the Austrian School, nor was he declaring the notion of an Austrian School to be meaningless.

[1]My observations, in part, rest on Mises (1969, p. 41), personal conversations with Hayek, and Machlup (1981, p. 21). It is abundantly clear from Mises's writings since 1940 that he perceived a yawning gulf separating his own Austrian economics from mainstream doctrines. So that his 1969 statement must be read to imply that the fundamental Austrian ideas, absorbed into general economics by the 1920s came, somehow, to be lost from general economics by about 1940.

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Yet one senses that Baird does, after all, wish us to draw lessons from his demonstration. It seems plausible, therefore, to read Baird as trying to correct an unfortunate attitude sometimes evident among Austrians, namely, an apparent conviction that there is no point in attempting to debate economists outside the narrow band of the Austrian faithful because non-Austrians simply do not (cannot) understand. Perhaps Baird wishes Austrians to recognize that, as exemplified by so prominent a scholar as Buchanan, Austrian ideas do have appeal to many economists outside the Austrian circle. So that it is time for Austrians to cast off their inward-facing insularity, and to embark with confidence on more open discussions with the rest of the profession. On this point, one can only heartily concur with Baird.

Are We All Austrians Now?

When key Austrian insights are presented to other economists these days, the ideas are, as a matter of fact, unlikely to be rejected outright. Of course, it will often be readily conceded, economics must remain methodologically individualistic, the consequences of ignorance and uncertainty must be explored, the nature of economic processes (as distinct from states of equilibrium) must be studied. But all this, some mainstream economists will contend, can be achieved, if at all, only at the very frontiers of highly technical research. The settled core of economic theory must necessarily—if only provisionally—deal with a more simplified model of reality. Thus, it is not that mainstream theory is today intrinsically inhospitable to Austrian concerns, but rather that it feels compelled to postpone addressing these concerns while comfortably pursuing its settled neoclassical agenda. Non-Austrian critics of mainstream theory (such as post-Keynesians), on the other hand, are likely to contend that Austrian insights are so devastatingly valid as to compel utter rejection of neoclassical conclusions. In effect, this means that rejection of Austrian appreciation for the coordinating capacity of markets may be grounded precisely in those insights on which Austrian dissatisfaction with mainstream theorizing has characteristically been based.

While Buchanan, as ably demonstrated by Baird, is almost unique among economists generally in his appreciation for and depth of understanding of the importance of Austrian insights, he is by no means unique in recognizing the validity of these concerns. What our professional colleagues at large dispute is not the abstract validity of Austrian concerns, but what these concerns must mean for everyday economics. For mainstream neoclassicals these concerns mean

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that equilibrium theory must eventally grapple with yet higher orders of technical sophistication—without which, they will argue, one must settle provisionally for existing equilibrium theory. For post-Keynesian critics, again, these concerns mean that the traditional appreciation by economic theorists for the benign quality of market institutions must once and for all be given up. But for modern Austrian economists neither of these responses is acceptable.

Contrary to both neoclassical economists and their post-Keynesian or radical critics, the Austrian school's insights concerning process, discovery, and uncertainty provide precisely those elements necessary for understanding the market price system. Austrian economics is therefore ideally suited to uphold the traditional appreciation of economics for the market. It is not that markets work in spite of the open-ended uncertainty surrounding human action, but rather that they work *precisely because* of this quality of human action. The open-ended uncertainty of the environment itself provides the scope and possibility for an entrepreneurial process of competitive discovery. In sum, Austrian insights are central and essential for understanding markets and not merely refinements to our knowledge.

Modern Austrian economics, which is unique among contemporary schools of economic thought, did not spring up overnight. It evolved from the study and elaboration of the ideas of Ludwig von Mises and Friedrich Hayek. Mises emphasized the entrepreneurial nature of market processes; Hayek gave us the understanding of such processes in terms of the discovery and mobilization of hitherto dispersed and useless information. Modern Austrians have articulated and welded these elements into their contemporary formulations. There is every justification, from the perspective of the history of ideas, for retaining the identification of the modern Austrian understanding of markets with the Menger-Mises-Hayek tradition. It is difficult to imagine how contemporary formulations of the Austrian School's understanding of markets could have been forthcoming unless nurtured in the intellectual tradition traced back to Menger. Nor is it the case, by any means, that this understanding of markets—as distinct from the Austrian insights undergirding this understanding—has been absorbed into mainstream economics. Quite the contrary: Mainstream theorists understand the achievements of the market in terms which do *not* incorporate the Austrian concerns; radical and other critics of mainstream theory deploy Austrian concerns to deny validity to mainstream (and Austrian) appreciation for market coordination.

Buchanan may well be the brilliant exception to the generalizations of the preceding paragraph. It is a tribute to his open-minded-

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ness, clarity, and profundity of thought that—coming from a rather different (Knightian) tradition (which Baird delicately reminds us also generated the most consistently neoclassical of contemporary schools)—Buchanan has independently arrived at so much that is central to modern Austrian economics. But to label Buchanan "Austrian" would be obviously bizarre in terms of the history of ideas (and insulting to the breadth of Buchanan's professional interests and influence). And to use Buchanan's commonality with Austrians as grounds for discontinuance (by Austrians and by others) of the "Austrian" label, as a means to identify the work of the disciples of Mises and Hayek, would appear to be equally unreasonable. The distinctiveness of the Austrian approach is surely still sufficiently significant for the doctrinal label to serve a useful identifying function—besides its justification in doctrinal history.

However, Baird is certainly on safe territory to imply that Austrians be more appreciative of insights shared with economists trained in other traditions. Such greater appreciation might well generate more fruitful interaction between Austrian economists and their colleagues. Such interaction can be expected to sweep away vestiges of the attitude perceived among Austrians that expresses the sense of an impenetrable barrier separating Austrians from their professional colleagues—an attitude to be explained, and perhaps excused, as a natural response to the refusal of the economics profession, as recently as 15 years ago, to see Misesian economics as anything but crude, obscurantist apologetics for capitalism. Dissolution of such a barrier, real or imagined, can only enhance common economic understanding and scientific progress. The prospect of such enhanced understanding does not, I would maintain, argue against recognizing the distinctiveness of modern Austrian economics, and of its doctrinal roots in a proud intellectual tradition. But, one may perhaps hope, this prospect may eventually point toward a climate of scientific understanding in economics in which continued Austrian distinctiveness may indeed no longer be called for. Baird is to be commended for a fascinating paper directed at that end.

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COMMUNICATIONS

Interpreting Keynes: Reflections on the Leijonhufvud-Yeager Discussion

George S. Tavlas

Introduction

In a recent exchange in this *Journal*, Leland Yeager (1988) and Axel Leijonhufvud (1988) consider the significance of Keynes's *General Theory* (1936) as a contribution to macro/monetary analysis. Yeager argues that "the Keynesian Revolution was a *diversion* from the path of progress in money/macro theory" (1988, p. 207, orginal italics).[1] According to Yeager, the *General Theory* contributed importantly to the neglect of traditional theories of monetary disequilibrium developed by pre–*General Theory* writers. It also was highly conducive to the disregard accorded to efforts by post–*General Theory* writers such as Clark Warburton to revive and extend monetary disequilibrium analysis (Yeager 1986a, 1986b). Leijonhufvud, on the other hand, has long maintained (e.g., 1968) that there is much in the *General Theory* to support the view that Keynes's monetary analysis is considerably more sophisticated than assumed in the Hicks-Hansen IS/LM caricature of income expenditure theory. An accurate and balanced interpretation of the *General Theory* and of Keynes's collected writings leads to the view, argues Leijonhufvud, that Keynes certainly did postulate a theory of monetary disequilibrium and a policy accentuating the importance of money. In contrast, it was the widespread proliferation of the IS/LM model within the profession

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[1]See also Yeager (1973, 1986a, 1986b).

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that led during the 1940s and 1950s to the eccentric new doctrines of the "unimportance of money" and the "ineffectiveness of monetary policy" (Leijonhufvud 1968, p. 25).

Unlike old soldiers, some arguments do not fade away—even after more than 50 years of discourse. Fortunately, in this case the end can be shown to be close at hand, with the outcome resolved decisively in favor of the view espoused by Yeager. For Leijonhufvud's exegesis rests on the Hicks-Hansen interpretation of the *General Theory* and the influence exerted by the IS/LM model on the profession. But John Hicks and Alvin Hansen were but two of the early interpreters of the *General Theory*. Moreover, Hansen was separated by large geographical distances from Cambridge, England, where the process, encompassing a number of years, of thinking out and writing the *General Theory* took place: Hansen left the University of Minnesota in 1937 in order to begin his tenure at Harvard. Throughout most of the 1930s Hansen had been a quantity theorist; his Keynesian conversion did not emerge until the late 1930s. Meanwhile, Hicks did spend several years visiting Cambridge (on leave from Manchester) during the mid-1930s. But during these years (1935–38), he had little contact with Keynes and Keynes's followers. In particular, Hicks was invited to Cambridge by Arthur Pigou; Hicks accepted Pigou's offer because of his (Hicks's) friendship with Dennis Robertson (Hicks 1979, p. 200). As Hicks has stated, he was not well received by the Keynesian camp: "Cambridge, however, was already driven by disputes between Keynesians and anti-Keynesians; and since I was associated with Pigou and Robertson, I found myself regarded, at least by some Keynesians, as being in the 'anti' camp" (Hicks 1979, p. 200). Thus neither Hicks nor Hansen made a significant contribution to the formation of Keynes's views as articulated in the *General Theory*.

There were, however, others who were closely associated with Keynes as he developed the doctrines set forth in the *General Theory*. In particular, there was the so-called Cambridge "Circus"—a group of younger economists at Cambridge (England)—consisting of Richard Kahn, Joan and Austin Robinson, James Meade, Piero Sraffa, and Roy Harrod. The Cambridge Circus met regularly between 1931 and 1936 to discuss, criticize, and propose changes to the successive drafts of what was later to become Keynes's *General Theory*, with Kahn constituting the channel of communication between the group and Keynes.[2] What did this group of economists—having had direct

[2]Keynes himself never participated in the discussions. Patinkin (1978, p. 6) argues that his circumstances "may simply have been due to the fact that he did not have the time."

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access to Keynes, having influenced Keynes, and which, in turn, was influenced by Keynes—think about the effectiveness of monetary policy? What was the Circus's interpretation of Keynes's views on money as articulated in the *General Theory*? As the remainder of this paper documents, the impotency attributed to monetary policy by Keynesian economists during the 1940s and 1950s was by no means a Hicks-Hansen diversion. It was very much a *General Theory* diversion.

The Cambridge Circus and Monetary Economics

Prior to the publication of the *General Theory*, monetary analysis had for centuries been dominated by the quantity theory of money. There were, of course, a number of variants to the quantity theory. But all had in common the view that inflation is primarily a monetary phenomenon. Further, all variants shared the view that monetary policy is an important instrument for purposes of economic stabilization (either cyclical or secular). One variant of the quantity theory was developed by Keynes's colleagues at Cambridge—Alfred Marshall, A. C. Pigou, and F. Lavington—as well as Keynes himself in his early writings (e.g., Keynes 1923). The Cambridge approach stressed a behavioral, demand-oriented interpretation of the quantity theory. Under this approach, the demand for money rested upon capital-theoretic foundations, emphasizing choice-making behavior of individuals.[3]

With the publication of the *General Theory*, established monetary doctrine, including the Cambridge version of the quantity theory, came under intense attack. Prominant players in this attack included those members of the Cambridge Circus who wrote on monetary economics during the 1930s—notably Richard Kahn, Joan Robinson, Roy Harrod, and James Meade. The criticisms of the quantity theory made by these economists, which in many instances either appeared concurrently with or prior to Hicks's famous *Econometrica* article (1937), and which were to become hallmarks of the Keynesian Revolution, included (i) negation of the quantity-theory view that inflation is a monetary phenomenon in favor of a cost-push hypothesis of

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Although Harrod taught at Oxford during the 1930s, Eltis (1987, p. 595) writes: "During the 1930s Harrod frequently stayed with Keynes and he was increasingly drawn into the group of brilliant young economists which included Richard Kahn and Joan Robinson who were helping him develop the new theories which culminated in *The General Theory*."

[3]The earlier Cambridge formulation of the quantity theory, in terms of capital-theoretic approach to the demand for money, contributed to Milton Friedman's (1956) reformulation of the quantity theory (see Tavlas 1981).

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inflation, (ii) rejection of the earlier Cambridge behavioral demand-for-money analysis as formulated by Marshall, Pigou, and Lavington in favor of a mechanical interpretation of velocity, and (iii) the view that monetary policy is a weak stabilization instrument.

Richard Kahn

An initial blow against the quantity theory view that inflation is caused by changes in the supply of money was struck by Richard Kahn in his 1933 article "Public Works and Inflation." According to Kahn: "The rise of prices is determined by the supply curve [for labor] and nothing else" (1933, p. 169). Similar arguments were presented in two later articles by Kahn that appeared in the *Economic Journal* (1937, 1938). Subsequently, Keynes (1939) acknowledged that Kahn was probably responsible for the Keynesian view that prices are soley determined by marginal cost. Keynes (1939, p. 39) credited Kahn as the writer "who first attacked" the problem of studying "the relation of the the general level of prices to wages" and who reached the conclusion that it was indeed proper to use such concepts "that in competitive conditions prices are governed by marginal cost" and "that for a closed system as a whole marginal cost in the short period is substantially the same as marginal wage cost rather than to be derived from monetary factors." Moreover, Kahn himself has recently stated that one of the important contributions of his work during the early and mid-1930s was ". . .finally disposing of the idea that the price level is determined by the quantity of money. I never had been able to understand the quantity theory. What I explained in my article is that the price level is determined by the conditions of demand and supply in much the same way as the price of an individual commodity" (1978, p. 14).

In a 1936 article, Kahn compartmentalized the demand for money into "active" and "idle" components, contributing to a passive, mechanical interpretation of the velocity of circulation of money. Kahn stated that "the size of the active circulation (which is the only portion of the total stock of money that can be directly related to prices and outut) is determined by the level of prices and of output and cannot be regarded as their determinant (Kahn 1936, p. 145). Kahn's segmentation of the demand for money thus resulted in a passive interpretation of velocity as follows: "V is a weighted average, and depends on the ratio of the inactive to the active circulation. . . . Now it can easily be demonstrated that if M increases [through an open market purchase], and if the active circulation does not increase in consequence, i.e., if PT does not increase . . . then V, the weighted *average,* will diminish, as a result of the change in the

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relative weights of the active and inactive circulation, in exactly the same proportion as M has increased; so that MV is unaltered" (1936, p. 146, original italics).

Thus far, Kahn's pre–Hicks-Hansen work has been shown to include two of the Keynesian criticisms of established monetary doctrine—the negation of the quantity-theory interpretation of inflation and the reversal of the earlier Cambridge behavioral approach to the demand for money. What about the effectiveness of monetary policy? In his 1936 article, Kahn concluded that there is little scope for monetary policy other that keeping the level of interest rates down during situations of government financing. "The fact that $MV = PT$ simply tells us that *if* nothing is calculated to increase PT, an increase in M will fail to increase MV" (original italics). The reason for the extremely loose connection between money and activity was ascribed to the various elasticities upon which monetary policy must depend in order to exert an impact on nominal income. Kahn (1936, p. 146) listed the following: (a) the elasticity of the demand for money with respect to the interest rate, (b) the interest elasticity of investment, (c) the elasticity of output with respect to investment, and (d) the elasticity of prices with regard to output.

The importance of Kahn's views are accentuated by the following facts: (i) As noted, Kahn constituted *the* channel of communication between the Cambridge Circus and Keynes (Patinkin 1978, p. 6); (ii) the foregoing views were pre–Hicks-Hansen; and (iii) Kahn, the economist closest to Keynes during the formulative years culminating in the *General Theory*, attributed his views directly to Keynes. Thus, after noting the reasons (listed above) as to why there is likely to be a loose connection between money and economic activity, Kahn (1936, p. 146) stated: "I clearly [do] not regard the expansion of credit as the *cause* of the increase in employment. As Mr. Keynes has clearly pointed out, if a man grows broader it is desirable that he should lengthen his belt; but the lengthening of his belt is not the reason why his girth has extended" (original italics).

Joan Robinson

Let us now move on and consider Joan Robinson's early work on monetary economics. As a useful point of departure, consider Robinson's review article (1938) of Bresciani-Turroni's *The Economics of Inflation* (1937), which dealt with the German hyperinflation of the early 1920s. Bresciani-Turroni's explanation of the German hyperinflation was that the enormous rise in the German price level was entirely a consequence of government borrowing of newly created money from the Reichsbank in order to finance the budget

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deficit. Thus, after outlining Bresciani-Turroni's interpretation of the German episode, Robinson (1938, p. 507) noted, "Professor Bresciani-Turroni is a strong adherent of the quantity-theory school." Robinson (1938, p. 509), however, expressed dissent with the monetary interpretation of the German hyperinflation: "The author assumes, rather than argues, that an increase in the quantity of money was the root cause of the inflation. But this view is impossible to accept. . . . There is no evidence whatever that events in Germany followed this sequence." Robinson (1938, p. 509) conceded that an increase in the quantity of money might result in a rise in the price level, but only if "it leads to a reduction in the rate of interest, which stimulates investment and discourages saving." The causal role of money was thus seen to operate strictly through an indirect portfolio-adjustment channel. Robinson, however, doubted whether the quantity-theory interpretation was actually the case during the German inflation.

Instead, Robinson (1938, pp. 510–11) elucidated her contrary view of the inflationary process. "The essence of inflation," she argued, "is a rapid and continous rise of money wages." "Without rising money wages, inflation cannot occur." The quantity-theory interpretation was regarded as "merely a theoretical possibility, not an account of the course of events in Germany" (1938, p. 511). Robinson argued that the increase in the German money supply which took place during the early 1920s was an endogenous response to prior increases in nominal wages.

The cost-push hypothesis of inflation was also articulated in Robinson's *Introduction to the Theory of Employment* (1937). Additionally, this volume includes the two other components forming the core of the early Keynesian attack on the quantity theory—the impotency of monetary policy and the mechanical interpretation of velocity. The former component is a derivation of post–*General Theory* portfolio-adjustment reasoning, to which Robinson alluded in her review of Bresciani-Turroni. In *Theory of Employment*, monetary policy again was seen to work only through its effect on the rate of interest, depending on the interest elasticity of investment. But, according to Robinson (1937, p. 121), the latter elasticity was likely to be insignificant: "The monetary authorities normally try to foster the remedial action of the rate of interest by deliberately increasing the quantity of money where activity has fallen to a low level, and restricting it when the boom is at is height. . . . It is found that such action as the authorities normally take is not sufficient to induce a steady rate of investment, for once pessimism has taken hold of the entrepreneurs a moderate fall in the rate of interest is not sufficient to restore the inducement to invest, and when they are dazzled by

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golden visions of profit a moderate rise in the rate of interest will not check their enthusiasm."

Leijonhufvud (1968. p. 405) has argued that "the interest-inelasticity of investment became the pivotal argument in the New Economics position on the issue [of the efficacy of monetary policy]. As we have repeatedly emphasized, this postulate did not enter into Keynes's analysis at all. The dogma of the interest-inelasticity of expenditures as the bane of monetary policy did not originate in Cambridge but in Oxford."[4] In light of the evidence presented above with regard to both Kahn and Robinson, Leijonhufvud's thesis needs to be revised as follows: The dogma, of the interest-inelasticity of expenditures as the bane of monetary policy as having originated in Oxford (and not in Cambridge), itself originated at UCLA.

Robinson's view concerning the passivity of velocity follows (as in the case of Kahn) from the proclivity of Keynes's early interpreters to compartmentalize the demand for money into "active" and "idle" components. To demonstrate this relation between the segregation of the two components of money demand and a passive velocity of circulation, consider an illustration given in *Theory of Employment* relating to the sequence of events following an increase in the right-hand side variables of the quantity equation. "A rise in . . . *PT*," argued Robinson (1937, p. 95), "is determined, roughly speaking, by the level of trade activity." If the banking system fails to increase the money supply to meet the induced increase in the active circulation, "the rate of interest rises and inactive deposits fall" as much as the active deposits have increased (p. 95). Hence, "the average velocity of circulation of money is raised [and] an increase in *V* is brought about as a consequence of an increase in *PT*" (p. 95). In this manner, velocity becomes a passive concept, adjusting so as to preserve the identity of the quantity equation.

Roy Harrod

In a 1937 article titled, "Mr. Keynes and Traditional Theory," Roy Harrod presented a virtually identical representation of the equations contained in Hicks's 1937 *Econometrica* article. Indeed, Warren Young (1987) has claimed that Harrod's paper was written before Hicks's piece and that, accordingly, Harrod deserves credit as the originator of the IS/LM approach. In his 1937 article, Harrod argued that the analysis of price determination contained in the *General Theory* was based on cost-markup theory, and not on the quantity

[4]As evidence, Leijonhufvud (1968, p. 41) cites the Oxford Surveys of the late 1930s, dealing with the interest elasticity of investment.

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theory of money. According to Harrod, in Keynes's system "the price level should be determined otherwise than by the monetary equation." And "the price level is related to the level of activity by the marginal cost of production" (1937, p. 83).

Also, in his 1936 essay, *The Trade Cycle*, Harrod argued that given "those forces which . . . govern the volume of output and the level of prices, . . . these in turn cause the velocity of circulation to be what it is" (1936, p. 120).Thus, in the case of Harrod, velocity adjusts passively so as to preserve the identity of the quantity equation. Further, Harrod, too, was skeptical about the efficacy of monetary policy during recessions. He argued that in "certain instances" the demand for money becomes "extremely elastic. . . . Thus it seems improbable that banking policy, however inspired and well informed, could secure a sufficient fluctuation in long-term interest rates to ensure a steady advance" (1936, pp. 124–25).

James Meade

James Meade's writings present a most interesting case, for several reasons. First, in his 1937 book, *Economic Analysis and Policy*, Meade, in contrast to the other members of the Cambridge Circus, put considerable weight on the efficacy of monetary policy during depressions. Chapters II and III of *Economic Analysis and Policy* show how open market purchases serve to "reduce the rate of interest on long-term industrial securities . . . increasing the demand for capital goods and consumption goods" (1937a, p. 28). He thus argued that open market operations should be used to "increase the amount of money and lower interest rates when there is general unemployment" (1937a, p. 30).

The second reason why Meade's writings are of special significance is to be found in his 1937 article "A Simplified Model of Mr. Keynes' System." In presenting a mathematical and general equilibrium model of the *General Theory*, in that article (1937b), Meade, like Harrod, articulated an analytic framework strikingly similar to that found in Hicks's 1937 *Econometrica* contribution. As David Vines has recently noted regarding Meade's 1937 article: "In this article Meade set out the equations of the IS/LM model (and *apparently this paper was circulated before the celebrated exposition of the IS/LM [model] was presented by Hicks*)" (Vines 1987, p. 411, italics supplied).

The following observations are in order. First, two other economists—both members of Keynes's inner circle—independently presented the theoretical structure of the *General Theory* in IS/LM terms. Given that three researchers concurrently and independently

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derived the IS/LM model from Keynes's book, could it be that the IS/LM model is not merely *an* interpretation of the *General Theory* but a *message* of the *General Theory*? It is worthwhile to point out in this connection that Keynes, on reading Hicks's paper, wrote to Hicks that he had "next to nothing to offer by way of criticism" (Bliss 1987, p. 644). Second, it is interesting that in Meade's case we have a writer who espoused both the IS/LM framework *and* the efficacy of monetary policy. Apparently, the Hicks-Hansen framework was not a necessary condition for the widespread impotency attributed by the profession to monetary policy during the 1940s and 1950s.

Whither the Quantity Theory?

As the foregoing presentation has documented, the impotency ascribed to monetary policy by Keynesian economists was not a Hicks-Hansen creation. It was a *General Theory* creation. Members of the Cambridge Circus such as Kahn, Robinson, and Harrod, who were partakers in the generation of ideas contained in the *General Theory*, all interpreted that book as denigrating the efficacy of monetary policy—prior to the appearance of Hicks's 1937 article. Further, all thought that the *General Theory* served to effectively obliterate the quantity theory of money. Thus, consider the following:

> For discussion of changes in trade activity, the quantity theory is a weak and treacherous instrument [Robinson (1937, p. 97)].
>
> Dr. Neissers' article [i.e., Neisser (1936)] is an extreme example of the type of confusion which is liable to arise from blind faith in the Quantity Theory of Money [Kahn (1936, p. 146)].
>
> And that was the end of the *Quantity Theory* until its recent resuscitation. Keynes in his long struggle for release had conquered [Kahn (1984, p. 59) on the impact of the *General Theory*].
>
> The set of ideas to which the doctrines of this essay are most repugnant are those connected with the Quantity Theory of Money. This is a curious upshot. For many years monetary doctrine . . . has been thought to be the securest part of economic theory. Yet all now seems changed [Harrod (1936, p. 125)].

Finally, it is extremely noteworthy that several of the articles cited above—Kahn (1937, 1938), Robinson (1938)—were published in the *Economic Journal*, of which Keynes was editor. At a time when his book was creating a revolution in economic thought, are we to expect that the editor elected to stand detached from interpretations of his views that may have misrepresented his message?

Casualties of the Keynesian Revolution

The intellectual environment created by the *General Theory* contributed to both the intellectual and personal abuse of writers who

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continued to espouse what had long been established monetary doctrine. As noted, Yeager cites the work of Clark Warburton as one such writer. There were others as well. Three such writers were Dennis Robertson, Arthur Marget, and, during the 1950s and into the 1960s, Milton Friedman.

Robertson had been a student of Keynes. He then became a fellow teacher at Cambridge and a collaborator in research. However, Robertson thought that the theoretical presentation of liquidity preference in the *General Theory* was flawed.[5] His reaction to the *General Theory*, and his continued adherence to the Cambridge behavioral demand-for-money approach to the quantity theory, led to an estrangement between Robertson and Keynes (Danes 1987, p. 210).

The outcome of this estrangement is a rather sad commentary on the behavior of certain members of the profession. As Harry Johnson (1978a, p. 136) pointed out: "Keynes had a group of young people around him [the Cambridge Circus]—Richard Kahn and Joan Robinson, in particular. . . . He deliberately egged them on to attack Robertson—not that they needed urging." Johnson also noted that this led to "the harrying of Robertson through the 1930s both in print and personally; the latter was much more serious. He had been prevented from receiving what he (and many others) considered was the final reward of a serious academic career, namely a professorship at Cambridge" (1978a, p. 139). Likewise, David Laidler (1980, p. 1272) has observed that "there is nothing in the history of monetarism to parallel the hounding of Dennis Robertson by Keynes and his younger colleagues."

Arthur Marget was another casualty of the Keynesian Revolution. Marget taught first at Harvard (1920–27) and then at the University of Minnesota (1927–43). During the 1920s and 1930s he was a prolific contributor to the quantity-theory literature. His *magnum opus* was *The Theory of Prices*, published in two volumes (1938, 1942). The first volume (1938) was defense of the quantity theory from the critical positions adopted by Keynes in the *Treatise on Money* (1930). The second volume (1942) was a defense of established monetary doctrine from the criticisms contained in the *General Theory*.

Reviews of the first volume of *The Theory of Prices* were, for the most part, favorable. Interestingly, Alvin Hansen reviewed the book (favorably) for the *American Economic Review*. Hansen wrote that "this volume is the result of a stupendous amount of work in the literature on money and prices. It is the product of prodigious scholarship such as is extremely rare in America" (Hansen 1938, p. 750).

[5]See, for example, Danes (1987).

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By contrast, the *Economic Journal* reviewer, Nicholas Kaldor, was, to say the least, considerably less generous in his appraisal. Kaldor, who by the late 1930s had become a disciple of Keynes (see Tavlas 1981), thought the book was "pompous" (1939, p. 455). "It reminds one of the bourgeois solidity and spaciousness of that bygone age" (1939, pp. 455–56). In particular, Kaldor was critical of Marget's defense of the quantity theory of money. Said Kaldor: "Continued use of the $MV=PT$ [Irving Fisher's equation of exchange] type of equation (or of the $n=pk$ [Cambridge] type), even when shorn of its wings, as in Professor Marget's interpretation, is positively harmful rather than helpful" (1939, p. 497).

The second volume of *The Theory of Prices* (1942) received praiseworthy reviews in both the *American Economic Review* (Ellis 1945) and the *Journal of Political Economy* (Reed 1942).[6] Thus, Ellis wrote: "Beyond his exhuberant scholarship and industry, Marget offers us penetrating thought, sound judgement, and a method more complete than Keynes's for articulating partial and general equilibrium analysis and monetary theroy" (1945, p. 90). Reed "congratulate[d] him [Marget] on his literary achievement" (1942, p. 564). Repeating a point that Hansen had made in his earlier review of the first volume of the *The Theory of Prices*, Reed stated that Marget's "work represents a type of research that is extremely rare in America" (1942, p. 564). By contrast, the editors of the *Economic Journal*—Keynes and Austin Robinson—sat by on the sidelines. For some reason, they decided not to have the second volume of *The Theory of Prices* reviewed. By the early 1940s, Marget's quantity-theory orientation was out of fashion. Yet, in the second volume of *The Theory of Prices* he wrote: "It will be the workers of another generation, possessed of a later and broader perspective than our own, who will decide where victory lay in the 'Keynesian controversy'—one of the greatest, if not the greatest, of the internecine controversies that have ever split the ranks of economic theorists" (1942, p. 768). Years later, Marget's approach would be vindicated, due in large measure to the work of Milton Friedman.

But it was not to be easy. Friedman's efforts to revive the quantity-theory approach during the 1950s and 1960s met with a good deal of skepticism, if not outright cynicism. As Robert Lucas (1984, p. 53) has observed: "The [Keynesian] consensus of the 60s was artificial and unhealthy. Look at the way Friedman's work was criticized during that period. I think it's just a disgrace to the profession that he was treated as though he were some kind of nut."

[6]These are the *only* reviews of the second volume that I have been able to locate.

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Friedman was the beneficiary of an earlier (1930s) Chicago monetary tradition which rejected the Keynesian Revolution and which formulated the quantity theory in terms of a behavioral velocity or demand for money function with respect to price expectations.[7] But Friedman's Chicago predecessors were writing at a time when there was as yet no adequate theory of demand for a stock. Friedman (1956), however, was able to reformulate the quantity theory in terms of consumer behavior, where the demand function for money depends on the price level, permanent income, bond and equity yields, the rate of change of the price level, the ratio of human to nonhuman wealth, and a taste variable. This represented an important modification of the pre–*General Theory* Cambridge approach, extended to include other variables, in addition to income and wealth, in the demand for money function.

Friedman was also the heir to an empirical tradition in American monetary economics dating back into the mid-19th century.[8] In this vein, Friedman presented the reformulated quantity theory as a testable empirical hypothesis of a stable demand function for money. While Friedman's approach won the day during the late 1960s and 1970s, the 1980s saw a breakdown in many countries of what previously had been stable demand for money functions.[9] One response to this breakdown has been the so-called buffer-stock, or disequilibrium, approach to monetary theory and money-demand estimation.[10] This modern disequilibrium approach is very much in line with the views of earlier disequilibrium theorists, such as Clark Warburton. As David Cobham (1988, pp. 4–5) explains the modern approach: "It assumes that markets do not clear perfectly; prices are not automatically or immediately adjusted to market clearing levels as if by some Walrasian auctioneer but are set by particular economic agents on the basis of their expectations of the behavior of other agents and their perceptions of their own interests. . . . Disequilibrium monetarism [also] assumes that, although automatic equilibrating forces

[7]For documentation on both these points, see Tavlas (1977a, 1977b).

[8]See Tavlas and Aschheim (1985).

[9]Friedman's empirical work has always used a long-run (i.e., no lagged dependent variable) specification of the demand for money. Further, Friedman has always estimated using cyclically adjusted data. Subsequent researchers have, for the most part, overlooked the longer-run nature of Friedman's approach, employing instead, quarterly or annual data and a short-run specification of money-demand (i.e., including a lagged dependent variable).

[10]See, for example, Laidler (1984). For a discussion of the empirical approaches used to implement the disequilibrium money concept, and for a listing of the recent literature, see Swamy and Tavlas (1989a, 1989b).

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may be very weak in the short term . . . they are very powerful over the longer term." Similarly, Warburton stressed the short-run stickiness of prices and wages in his disequilibrium theory, and the long-run tendency toward equilibrium (Yeager 1981, pp. 281–82; Dorn 1983, pp. 3–6; Dorn 1987).

Dennis Robertson once wrote that "highbrow opinion is like a hunted hare; if you stand long enough it will come back to the place it started from."[11] Perhaps so, but 50 years has been a long time to wait.

Conclusion

The key issue addressed in this paper is: Who is best able to tell us what Keynes really meant on monetary economics: Keynes's colleagues at Cambridge who during the 1930s contributed significantly to the development of the ideas contained in the *General Theory*, or Professor Leijonhufvud, separated from Cambridge, England, by an ocean and a continent, by some 30 years from the writing of Keynes's book, and equipped with subsequent developments in the economic theory of market information and search? One could argue, I suppose, that such economists as Richard Kahn, Joan Robinson, Roy Harrod, and James Meade were not up to the intellectual task of digesting the *General Theory*, even after having spent years contributing to its formation. It is doubtful, however, whether such a line of reasoning would have many (any) takers.

Harry Johnson (1978b, p. 189) has characterized Leijonhufvud's 1968 book as a "monumentally scholarly work." Meanwhile, Yeager has written that Leijonhufvud should step forth and take full credit for the originality of ideas wrongly attributed by Leijonhufvud to Keynes. He certainly should, and for reasons that go beyond the just attribution of ideas. For by having failed to take proper credit, Leijonhufvud has unintentionally perpetuated a second diversion: the belief that it was the Hicks-Hansen exegesis that led to the notions of the unimportance of money and the ineffectiveness of monetary policy. In fact, it was no such thing. It was Keynes!

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[11]Quoted from Nobay and Johnson (1978, p. 470).

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Open Enrollment: A Vehicle for Market Competition in Schooling?

Edwin G. West

Introduction

Following the repeated failure in the United States of numerous federal tax credit and voucher proposals for education in the recent past, the retiring President Reagan and his successor President Bush announced in January 1989 their enthusiastic support for an alternative reform that seems to them to promise more political success. It is know as "the open enrollment plan."

For many years we have witnessed the monopoly style exclusive territory practice in public education whereby students are geographically assigned to one school exclusively. The open enrollment plan, in contrast, claims to give parents a meaningful choice of schools across districts and sometimes across a whole state. The plan is now being attempted in England and Canada as well as in the United States. In Toronto the authorities have for some time claimed that there is open choice among government high schools. In practice, however, the most popular schools are soon declared "full" on the basis of obscure administrative criteria. But in England, Mrs. Thatcher has now laid down strong safeguards against bureaucratically imposed quotas in schools. British schools enrolling below a certain number must close down.

The U.S. state that has pioneered the open enrollment concept the furthest is Minnesota. And indeed much interest and excitement is being shown there this year because of what is thought to be a crucial new modification. The state has announced that up to $4,000 in state aid will move with each child who transfers from one public school to another. Minnesota authorities explain that the plan will force school districts to improve or to close down for lack of funds. The

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Governor of Minnesota, Rudy Perpich, describes the system as "market forces at work" (Leslie et al. 1988, p. 77). And it seems to be this latest Minnesota version of open enrollment that has caught the attention of Presidents Reagan and Bush.

Open Enrollment and a Market System

The comparison between the newest Minnesota plan and market forces, however, contains six important differences that the presidents' advisors seem to have overlooked. First, real market work with the use of full or near-full pricing. No explicit prices are to be introduced in the Minnesota plan, however, since public schools must remain "free." Second, although it is announced that funds *up to* $4,000 will move with each child, on average it is likely to be very much less. The public finance of schools is usually based on a foundation plan under which each district must make a minimum tax effort to qualify for state aid. A district that locally raises and spends more than the selected foundation level will receive no subsidy. Several others that spend varying amounts less than the foundation level will be awarded subsidies based on the difference. In practice, therefore, the amount of funds that will move with each student in the Minnesota plan will vary and will be much less than $4,000. A likely average figure would probably be around $1,000. Since the average expenditure per student in public schools is around $3,500, this reveals another contrast with a full market system. In that scenario funds up to nearer the full cost of education would move with each child as he or she is transferred from one school to another.

The third problem relates to the statement that Minnesota school districts that fail under the new system of competition will be forced to close. This proposition invites skepticism because little evidence is available that "bankruptcies" of public shools have been allowed to take place in the recent past. It is true that observers frequently quote the experience of New York's East Harlem where it is claimed three schools have actually been forced to close (Leslie et al. 1988, p. 78). The same observers concede, however, that the failed schools soon reopen after some "reorganization." In a market system, in contrast, since there are no "cushions" to fall back on, closure of the school under its original owners is usually final. New owners may restructure the institution after a takeover, of course, but the change of management is real and obvious. The new "reorganization" of failed public schools, in contrast, is under the auspices of the same owner: the government (although perhaps represented by different personnel).

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Whether any closing down of failing schools will occur in Minnesota will, in any case, depend on the outcome of a suit being brought against the state by the Minnesota Federation of Teachers who fear job instability connected with fluctuating school budgets. The Minnesota School Boards' Association is also against the plan for free choice and appears to be influenced by small rural districts that may lose many children to larger districts having more resources.

A fourth problem with the comparison between Minnesota's new plan and a market system is that, although the law envisages free choice of school districts across the state, school boards are nevertheless free to elect not to accept students. It is this kind of discretion that Mrs. Thatcher has forbidden in England. The idea of school choice across the whole state of Minnesota should, in any case, be kept in perspective. It is not likely that families would want to have their children commuting every day over distances of 10 miles or more. The relevant choice for parents usually concerns a sprinkling of schools within reasonably easy geographical reach. Notice too that a free market would respond to locational problems by generating service provision in areas of largest consumer demand, thereby minimizing relocation cost for the consumer.

A fifth problem is that there is no indication about incentives to teachers and administrators of particular schools that the open enrollment plan is supposed to bring. Incentives would be clear and obvious, for instance, if it was openly decreed that salaries of school principals as well as of teachers were to be somehow related by a particular proportion to the enrollment they attract. Nothing, however, is said on this score. But if the sponsors of the plan are really looking for market-like competition within the public school system, some such specification must be made. And such an incentive provision is included in England's Act of 1988.

When asked to take on scores of out-of-district students without the type of incentives just mentioned, several ways are open to a school board in Minnesota to refuse. For instance, according to Subdivision II of Article VII of its Education Bill, a board may simply announce a blanket resolution that nonresident pupils may not attend any of the schools or programs. Alternatively a board may be attracted to the idea of accepting only pupils who bring with them higher than average funds. It can then refuse others by carefully adopting a specific pattern of standards for acceptance and rejection since the legislation obliges the school board to arrive at its own standards. These may include the capacity of the program, class, grade level, or school building. One can anticipate many situations where the school board, having accepted the most lucrative students, will then proceed

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to refuse additional (less profitable) students on the grounds that its particular programs or schools have "reached their capacity."

A full market scenario, in contrast, will be one in which suppliers use all possible improvisations and expedients to carry any increased load in the short-run and make all possible effort to expand in the long-run. To use an analogy, suppose customers were transferring from a relatively inefficient retail store and were beginning to crowd the premises of a rival store. To argue that the process should stop because it was encouraging "crowding" would be implying an odd notion of efficiency. Any retreat to "catchment areas" to prevent the crowding would remove the very pressure that was working to improve things. Under such pressure the favored store would meet the crowding with temporary measures pending plans for extension, while the unfavorable store would be continuously spurred into trying to copy the superior service of its rival. Staff who were frustrated by their treatment by unimaginative managers in the first store would begin to find tempting vacancies occurring in the more successful, and therefore crowded, second store.

In the case of public schooling many teachers become disenchanted, not just with inefficient managers, but also with inflexible union rules. Consider for example the failure of many U.S. state legislatures to enact performance-based merit pay salary incentive programs due to the political opposition of teachers, unions. Such outcomes bring the most frustration to the best teachers. School privatization, in contrast, would automatically bring more flexibility in salary matters. And indeed, once a full education voucher was established we could expect more teachers to begin managing and even renting or purchasing their own schools if they were still dissatisfied with their salaries and working conditions. But clearly the Minnesota plan cannot be expected to involve anything like this degree of change in the educational scene.

Despite these kinds of observations, Charles L. Glenn, an official of the Massachusetts Department of Education, insists that true competition is one of the powerful things going on at present in Minnesota-like school reform (Patka 1988). Elementary economics, of course, tells us that the most crucial condition for competition is free entry. And this brings us to the sixth, and probably most important, inaccuracy of the comparison between the open enrollment plan and a market system. Since free entry of new private or denominational schools is no part of the Minnesota plan, or any of the public school open enrollment plans, the full conditions of competition are obviously not present. Also the popular description of open enrollment plans as "public schools by choice" is ambiguous. The correct

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meaning of choice implies choice among *all* the possible alternatives. Choice that is constrained to exclude private schools cannot properly be called free choice.

Free entry is essential if we are to benefit from the kind of competition described by classical economists such as Adam Smith. The type of competition they envisaged was a dynamic process that promptly rewards those who introduce superior methods. Suppose, for instance, that new cost-saving methods become available but have not been widely adopted. In a Smithian-type for-profit, free-market system, entrepreneurs will seize the corresponding opportunities for entry. In contrast, in the nonprofit world of public schools, entrepreneurial incentives are weakened and administrators respond more to political pressures than to market pressures. The highest incentives for prompt adoption of new ideas are therefore absent.

Preserving the Public/State School System

It is possible that the use of the term "competition" by education departments to justify their open enrollment plans will invite others to push the full logic of the case, as we have tried to do here. But such discussion will probably make the average state much more cautious. Education bureaucracies typically do not relish the thought of competition in the proper sense of the term since that would transfer power away from them and toward their customers. Indeed, in many cases competition will make the present occupation of many state bureaucrats superfluous.

In light of this situation, the usual rhetoric of the typical educational establishment always includes the unspoken assumption that the test of any educational reform is that it will not injure the public school system. To take a further analogy, consider another government-provided service: the post office. Suppose there is proof of efficiency in a policy of contracting out to a private business the post office's highest cost services (say the third class mail). The present administrators would undoubtedly reject the proposal (as they have in fact done in the past) on the argument that it would injure "the post office system." But if competition is to mean anything, it must be allowed to drive inefficient uses of resources from the marketplace by allowing more efficient alternatives to enter. To the citizen taxpayer the main end is the provision of the best service for every dollar spent, not the maintenance in perpetuity of one particular means to that end. Similarly, to erect as the main end of education the everlasting preservation of "the public or state school system" is to confuse ends with means.

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But there is another reason why the constraint against "injuring the public/state school system" does not hold in the context of Minnesota. Its open enrollment plan includes the interesting option to 11th and 12th graders to transfer, at the state's expense, out of the public school (K–12) system and into post-secondary institutions. Insofar as this takes place (and 4,000 students are taking the option this year), the public school student population is whittled down. This means that the "forbidden" injury to the public school system is already predictable from Minnesota's new plan. Some of the post-secondary institutions being selected by 11th and 12th graders, moreover, are private and denominational establishments (Patka 1988).

A Defense against Vouchers

Advocates of open enrollment have revealed another purpose of the plan in addition to that of creating competition. It is to offer the most effective defense for fending off demands for a full-blown voucher system, "a system that will transfer money into private schools" (Leslie et al. 1988, p. 81). It is such statements especially that suggest the advocates are only half-hearted at most in their desire for competition. A "full-blown voucher system" after all implies "full-blown" competition. Since a voucher system is effectively a payment made by the government to a private or public school chosen by the parent of the child being educated, government schools will be forced thereby to face "full-blown" competition with nongovernment schools. But such invasion of the government administrators' territory would obviously not be welcomed by them. It is no criticism, moreover, that the full voucher system will transfer public money into private schools any more than it would be a criticism against competition with the post office, which would transfer customers' money away from those parts of the post office system that are inefficient and toward private businesses that are efficient.

The public or state school establishment often makes another objection to full vouchers. It is that the consequence would be ethnic and social segregation. But such an objection ignores the fact that typically proposed voucher systems preclude their participating schools (public or private) from practicing racial descrimination. In any case the public school system in the United States probably generates more segregation than do private schools. For, as Thomas Sowell (1984, p. 26) puts it, "In most of the nation's largest urban public school systems, there are not enough whites left to integrate, so any further racial integration in such places may be achievable only by the voluntary movement of black children into private schools."

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Evidence from states other than Minnesota demonstrate both the increasing pressure for competition in education and the simultaneous capacity of official education establishments to resist change. Last year the Colorado House rejected a measure that would have allowed parents to send their children to any public school in the state. In Iowa the legislature disapproved a bill that would have allowed public school students to enroll in neighboring districts but only if their home district lacked programs or courses students wanted. Both the sending and receiving districts would have had to approve such transfers. Also in 1988, Mississippi lawmakers defeated a proposal offered as an amendment to another bill that would have given vouchers to parents of kindergarten children and usable at any public or private school with a kindergarten program. In Utah legislative committees also rejected parental-choice bills. One would have provided parents with tax credits for private and public school expenses, and the other would have allowed parents to send their children to public schools in any district. Finally in Wisconsin a 1988 bill was defeated that would have provided disadvantaged families in Milwaukee with vouchers that could be redeemed for education at a public or private school.[1]

The Way Forward in Minnesota

Our review suggests that Minnesota may, after all, be the exception that proves the rule. Advocates of family freedom in education nevertheless will rejoice in this one exception. At least it may be better than nothing. And the exception today may produce unexpected demonstration effects tomorrow since it might generate experience that can be quoted across the land. Despite all the qualifications mentioned above, the increased ability to change schools in Minnesota, at least in some areas, might bring competition to some degree even if it is relatively weaker than full market competition.

A key variable in the possible progress from quasi-competition to market competition meanwhile is the magnitude and handling of Minnesota's state funds that will follow the children from one school district to another. One way in which this can be managed is for the receiving school to anounce a price for out-of-district students, a price that is approximately the same as the expected average transfer funds. It would be useful, moreover, to channel these funds via the parents. In this case the public would see more clearly what is already a fact:

[1]The information in this paragraph on experience across states is taken from *Education Week*, 18 May 1988.

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The Minnesota open enrollment plan already amounts to a voucher system, but one that is applied to public schools exclusively.

Fees Plus Subsidies and Loans: The Japanese Success Story

Vouchers and "public funding of private schools" can be designed to have the same economic results. Consider, for instance, an educational voucher worth $2,000. This would allow a family to purchase up to $2,000 worth of education at the (inspected) private school of its choice. The revenue of such a school would therefore be a positive and constant function of enrollment. Compare this with a general system of public funding of private schools. Suppose the funding is on the basis of $2,000 per student. The decision of a family to chose one particular school over another will trigger off a mechanism that will direct $2,000 to the chosen school in the same way as would a voucher of the value. In both cases the school's revenue is a positive and constant function of enrollment.

Similarly a tax credit could be designed to have the same result provided that, in the case of persons who paid no income tax, the tax credit were to be "refundable" as is the case with the 1983 Packwood-Moynihan proposal in the United States. Alternatively the credit could relate to all taxes paid, including indirect taxes.

Since governments in Australia, England, Japan, and Canada provide limited government subsidies to private schools, they already possess the beginnings of a system that could expand into a full market competition model. But if existing government schools are to be included, the subsidies should go directly to each individual school according to enrollment. And those state schools that do not survive financially because they attract too few students should be allowed to go bankrupt and their teachers to begin a new job search.

It is of supreme interest that Japan, having gone furthest in subsidizing private secondary schools, appears to be surpassing all other countries in terms of student achievement. The examination performance lead of Japanese over American students, for instance, grows at an astonishing rate between the ages of 15 and 18. Attendance at Japanese schools for this age group is not compulsory. Yet some 94 percent continue their education voluntarily. The Japanese state high schools are private and charge fees that amount, on average, to about $2,400 or 60 percent of cost, the other 40 percent being covered by central government subsidies paid on a per capita enrollment basis. It has been reported that a subsidy of around 50 percent of private school costs in Japan will persuade about 40 to 50 percent of urban

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parents to choose private schools. (*The Economist,* 24 December 1988, p. 12). Loans are available from a government-supported scholarship foundation to help families meet the fees at both public and private schools.

It is because these Japanese schools offer education to families at a positive price that large elements of competition have now appeared in the system. The family's degrees of freedom, meanwhile, are substantially increased—not only because it can choose a private school if it does not like the state offering, but also because it can quit formal education altogether if dissatisfied since schooling is not legally compulsory beyond the age of 15 (Lynn 1986, p. 51).

It is no doubt true that several cultural factors are operating to explain Japan's superiority in teenage educational achievement besides the greater competition brought about by its indirect voucher system. One would therefore require systematic multivariate analysis for the fullest and firmest conclusions. But Japan's academic superiority is truly impressive. The average Japanese 18-year-old now does better in math than even a fraction of the top 1 percent of 18-year-old Americans. And 94 percent of Japanese 16-year-olds stay on voluntarily and pay fees for their schooling, while in Liverpool, England, for example, 84 percent of the same age group leave school at the first opportunity (*The Economist,* 24 December 1988, p. 12).

Conclusion

It has been argued that, despite the fact that administered- or pseudo-market schemes such as that of open enrollment is gaining much attention, especially in the United States and Canada, they are ultimately a very incomplete avenue for true competition, choice, and equity in education. In contrast, the voucher and private school subsidy systems are clearly much superior instruments. But so far Japan alone seems to have recognized this fact. Others, meanwhile, seem to continue to be saddled with what they believe to be their "one best system."

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BOOK REVIEWS

Social Contract, Free Ride: A Study of the Public Goods Problem
Anthony de Jasay
London: Oxford University Press, 1989, 262 pp.

In the textbook models, even selfish men who lack any feeling for nation or community will obey the political authority because of their dependence on the government to supply certain essential goods and services. Civil order, national defense, and a clean environment are prominent examples. These so-called "public goods" are unique in that their consumption is nonexclusive. Once they are supplied, everyone, even those who did not contribute to their purchase, will benefit from their existence. Thus, it is generally argued that if individuals are not forced by the state to contribute to the cost of such goods, each will prefer to let others bear the economic burden of supplying the good while he enjoys a free ride. The received view is epitomized in Hobbes's classic dilemma. Either the supreme public good or internal and external security is not provided (sufficiently), or there is a provider with the power to tax those who benefit to pay for the good. That is, in the provision of internal and external security as well as other public goods, we must choose between anarchy or coercion. Hobbes assumed that people are so afraid of what they might suffer in uncoerced chaos that a powerful state is accepted as the best of a bad set of choices. Theories of social contract thus are assumed to legitimize the state without introducing a normative premise.

Anthony Jasay's new book, *Social Contract, Free Ride: A Study of the Public Goods Problem*, is unusual in that it starts from the nature of contracts and games and provides a radically new understanding of social coexistence. In doing so, Jasay offers a novel account of the public goods dilemma and dismantles the conventional theory.

Without relying on any assumptions about "man's better nature," Jasay deduces that the pursuit of maximum utility is sufficient to induce groups of rational individuals spontaneously to allocate among themselves, however "unfairly," the cost of the public goods they value highly. This is the main message of Jasay's book. In Chapters 1 through 7, a strict utility-maximizing approach is used. Further possibilities, using various moral motivations, are admitted in Chapter 8.

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The standard approach to public goods problems uses some form of the "prisoners' dilemma," where uncoerced contribution to the public good is irrational. In these standard explanations, when the "productivity" of public provision of a good is sufficiently superior to private-sector substitutes, incentive structures arise whose normal solution is that some people contribute and others free-ride on the public good thus created. Without government intervention, social roles are self-selected—those who pay for the good are "suckers," others are free-riders. Alternatively, this standard approach allows social roles to be imposed by "social contract," in which case everyone will contribute (typically through taxation).

According to this prevalent view, the primary role of the state is to ensure that the distribution of public burdens and benefits is decided by collective political deliberation rather than by the free interactions of autonomous individuals. In the domain of collective choice, in the nonmarket provision of goods and services, benefit and individual contribution are uncoupled. The point of the system is to make selected goods and services freely available, to help some members of the public at the expense of others. Benefit and contribution remain linked only for aggregates (the nation or the town), not for individuals. In this way the state turns into a redistributive engine par excellence. Through the political process, the "public" determines which aggregates will get what "public goods," and who will pay for the provision of these goods. Jasay, with impeccable logic, shows how and why that solution is unsatisfactory and why this naive quest for "fair" distribution is bound to fail, bringing about chronic overconsumption of public goods and stimulating the free-riding it was meant to prevent.

Jasay demonstrates that the standard explanation for the provision of public goods is but a special case among several other possible incentive structures or "games." The true role of the state is not, as we have been taught, forcibly to channel resources into the production of public goods that would not otherwise be available. Standing in contrast to the accepted collective form of decisionmaking is the market. In the domain of individual choice, any individual's benefit is firmly linked to his own contribution. The market order works on this principle.

In *The State*, an earlier book that is now starting to exert some influence, Jasay presented a theory of how the natural conflict between state and society transforms both in a process from which only historical luck allows us to escape.[1] The emergence of a relatively free society, the rise of the West, is the result of happy accidents in history, and the free society is a rare and endangered species. In *Social Contract, Free Ride*, Jasay reinforces this message by requiring us to face the prospect that even our constitutional-liberal doctrines are not liberal enough to protect us from the unintended and automatic crowding out of individual choice by collective will.

[1]Anthony de Jasay, *The State* (Oxford: Blackwell, 1985). James Buchanan commented on *The State*, "de Jasay is, for me, a real discovery." (Buchanan, "Review Article: From Redistributive Churning to the Plantation State." *Public Choice* 51, no. 2 [1986]: 241.)

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Though Jasay claims that the Hobbesian dilemma is spurious, he identifies a *practical* public goods problem emanating from the opposition of the two great competing principles of classical liberalism and socialism. The gist of classical liberalism in the public-political sphere is to give priority to individual freedom, to private options. The principle advises us to maximize the domain of individual choice.

The rival principle of socialism gives priority to "social justice," to reducing the pain of envy, to what is succinctly expressed by the Marxian phrase, "From each according to his ability, to each according to his need." The socialist principle urges us, in the context of the large, anonymous society, to reintroduce the norm of "solidarity" and mutual dependence that stabilized the hunter-gatherer horde for more than a million years and that is used today to stabilize small face-to-face groups. Proponents of the solidarity norm apparently fail to understand (or they do not mind) that reinstalling such a social system in the current large, anonymous society inevitably would lead to a totalitarian regime. Hence, those who have adopted socialism make great efforts to maximize the domain of collective choice, and in doing so, they automatically reduce individual freedom.

On the level of institutional arrangements, the principles of classical liberalism and socialism are reflected in two very different methods for solving coordination problems within society and providing needed goods and services: the market order and the command order. The market order is characterized by individual choice, freedom of contract, consumer sovereignty, and the individual's answerability for his decisions. The collective provision of goods and services is directed either toward redistribution in accordance with the principle of socialism or toward solving the Hobbesian public goods dilemma.

Jasay points out that mixing the institutional arrangements of a market order with those of nonmarket (or public) provision of goods and services "determines the character of a society more decisively than anything else in the political sphere." This claim is analogous to Karl Brunner's thesis of "the ambivalence of the political structure."[2] Every political structure is a mix of positive sum social games (i.e., productive activity and trade) and of negative sum social games (i.e., activities concerned with redistribution). This mix exists in every situation, in anarchy no less than in a politically structured society. The decisive difference between anarchy and a politically structured society lies in the methods used in the negative sum social games.

In anarchy, that is, in the absence of a single contract enforcer, the method used for redistribution from others to oneself is robbery. The efforts to protect oneself against the redistributive efforts of others are private methods of defense against robbery. In a politically organized society, both the methods used to redistribute resources from others to oneself and the defense against such attempts by others are those of the political process. Brunner's considerations prove useful in the analysis of the problem of public goods.

[2]See Brunner, "The Poverty of Nations," *Cato Journal* 5 (Spring/Summer 1985): 40–48.

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There are many allegedly "public goods," like health and education, for example, that are not inherently indivisible, but can either be divided up into individually consumed bits or gathered into large aggregates. These goods thus can be assigned either to individual choice or to collective choice. A society x tends to be more free than a society y if, with respect to inherently divisible goods, in x less recourse is taken to nonmarket provision of such goods and services than is the case in y. Insofar as a society adopts the principle of classical liberalism, it will not assign any inherently divisible matter to collective choice.

There are, however, some inherently indivisible matters, some intrinsic public goods. Hence, even in the freest of societies, there will be a domain of collective choice. We can call a choice "private" if its impact on others is negligible. All other choices are then "nonprivate choices." A nonprivate decision that is made for the individual(s) by others is collective in the broad sense, independent of whether it is made by a single person, a committee, or a majority. Decisions are collective in the narrow sense if they are made by the set of persons concerned or directly affected, that is decisions made collectively by individuals for themselves, so to speak.

Jasay points out that a constitutional rule guiding collective choice is of use only in cases of nonunanimity. Therefore, recourse to constitutionally based rulemaking indicates the recognition that there will always be individuals who dislike the decision reached in collective choice. In a cost-benefit analysis, however, these dissatisfied individuals may find it less costly to live with the disliked decision than to emigrate or to make serious efforts to change the constitutional rule in question. It appears unnecessary to invoke a social contract theory based on the idea of unanimity, however, to legitimize a collective choice.

Since even in the freest of societies there is a domain of collective choice, a question arises about which procedures should be used in making such decisions. A constitution can be viewed as a system of rules for collective choicemaking. Within the domain of collective choice, various decision rules are possible, and the constitution stipulates the particular rule that will be used in the society to which that constitution applies.

The decision rules among which societies choose can be described in various ways. One particularly useful description classifies these rules into voting and nonvoting procedures, and then the subset of voting procedures is divided into democratic and nondemocratic voting procedures. It is not easy to explicate the concept of "democratic voting procedure in the domain of collective choice," however. An approach I find fruitful is first to identify an extreme or ideal type of democracy—"head counting" or unqualified franchise without any restrictions (not even age) in combination with bare majority rule (50 percent plus 1 vote). Then we can introduce a comparative concept. To say that "x is more democratic than y" relays information about the comparative closeness of the constitutional rules "x" and "y" to the ideal type. In this way, we can identify a dimension on which voting procedures in collective choicemaking range from extremely democratic to plutocratic.

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The benefit of the democratic method is that (when unqualified franchise is practiced), it permits everyone to participate to some extent, even if only to one x-millionth part. Theoretically, even though such participation is less desirable than making decisions on one's own, it is still better than not having even an x-millionth part in the decisionmaking.

But it transpires that the democratic method just described cannot provide a guarantee against totalitarianism. The extreme or ideal type of totalitarianism may be defined as an order in which no sphere of the individual's daily life is immune from state interference, in which the protected domain of private choice is insignificant. State interference is total. The customary definition, which invokes auxiliary concepts such as ideology or doctrines about the identity of Throne and Altar, of worldly and spiritual power, of State (or leader) and society, introduces elements of the arguments that totalitarian regimes use to legitimize their system. It appears preferable not to mix the description of such systems with the arguments used in attempts to legitimize them or with explanations of their origin.

Having identified the extreme type of totalitarian system, we can construct a continuum of regimes that runs from freedom to slavery, and a consequent comparative concept of a free society. A society x is more totalitarian, that is, less free, than a society y if x is closer to the extreme type of totalitarianism than is y. The degree of totalitarianism is, of course, independent of who rules—a single person, the central committee of the Party, or shifting majorities in an unlimited democracy.

Every method for collective choicemaking and hence every constitutional rule has a built-in bias favoring particular identifiable interests. This must be so since, as Jasay convincingly argues, any rule of collective choicemaking is useful only in cases of *nonunanimity*, and any rule adopted has a probabilistic propensity to produce one type of outcome rather than another. If the method is used only once or a few times, any outcome is possible. But the longer the period over which the operation of a particular constitutional rule is observed, the more pronounced and visible its built-in bias will become. The more closely the voting rule approaches the extreme form of democracy described above, and the longer the period over which the rule is observed, the more the domain of collective choice will grow. This result follows because the political process will be used both by free riders seeking to achieve their aims and by individuals seeking to defend themselves against free riding by others. The groups attempting to defend themselves can only do so through the political process.

The more a constitutional rule approximates the extreme form of democracy, the more it will tend not only to enlarge its own domain, but also to level out rewards. As an unintended consequence, it will reduce efficiency and wealth creation by encouraging investment of resources and efforts in the political process rather than in the free-market process. The tendency to leveling is illustrated by the well-known dynamics of income transfers within the middle classes, typical of the interest group welfare state.[3] The transaction

[3]See Gordon Tullock, *The Economics of Wealth and Poverty* (Brighton, England: Wheatsheaf Books Ltd., 1986), pp. 119ff.

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costs of the bureaucracy will increase correspondingly. Politicians will use the rhetoric of "solidarity" to prevent comparisons between collective solutions to problems and private choice solutions to the same problems.

If, as Jasay argues, the Hobbesian dilemma could be overcome by spontaneous arrangements, the trend toward the reduction of freedom that has been prevalent in Western democracies in the 20th century could be stopped and perhaps reversed. But to do so would involve a restructuring of some of our basic institutional arrangements, and that would require a preceding change in the climate of opinion, something that is not likely to happen.

There have been many attempts to reverse the trend toward ever larger government. Of recent historic importance are the efforts of the Reagan administration and of Margaret Thatcher's government. But there are others. For example, the Labour Government in New Zealand has embarked on a program of deregulation, privatization, and microeconomic reform unheard of in such a short period of time. Nonetheless, the success of these efforts so far remains limited.

Thus, Jasay asks, why do contemporary societies end up with an ever-expanding state *even* when they claim to prefer less government? That is, the arena of collective choice generally continues to grow even when voters have indicated they want less government and the elected officials have made efforts to reduce public provision of goods. There is, of course, an enormous literature, encompassing several competing theories, devoted to trying to explain the growth of government. Almost all of the competing theories identify as an important factor systematic misinformation provided to the public about the actual costs of providing public goods, of imposing regulation, and of engaging in inflationary finance. Jasay's explanation—an "explanation of principle" in Hayek's sense—is couched in terms of his theory of public goods, which is founded on solid game-theoretical arguments. His explanation constitutes intellectual progress, and his theory can also guide us in our search for remedies.

According to Jasay, the standard approach to public goods problems sees two possibilities. Both appear unattractive: Either (a) no public goods can be provided sufficiently, or (b) social roles of taxpayer and tax beneficiary are imposed by an alleged "social contract"—everybody is coerced to contribute to *all* public goods. Public goods problems are conceived as typically "prisoners' dilemmas." Jasay shows that there are other possible incentive structures or "games." If the "productivity" of public provision is sufficiently superior to private-good substitutes, the risk of its failure may outweigh the attraction of free riding on its success, where both failure and success are weighted by their subjective probabilities. These probabilities vary with what each expects the others to do. Jasay thus finds that the prisoners' dilemma is transformed into a radically different "game," where it is rational for some to contribute even if others free ride on the public good thus created. The diagnosis of this potential game situation permitting *voluntary* cooperative solutions is *the core novelty of Jasay's public goods theory.*

Under his solution, the social roles of "sucker" and of free rider are selected by the individuals themselves. However, free riding is resented by the

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suckers, who regard it as "unfair." If, in order to suppress this "unfairness," society opts for the coercive solution, not only is there more coercion but, more importantly, free riding is reintroduced, now in the form of overconsumption of certain public goods and redistribution of the incidence of taxation.

For at least 75 years, individual freedom has been on the decline worldwide. Probably for the first time in our century, at any rate for the first time since the New Deal, more-than-rhetorical freedom has gained some ground in important countries of the political West. Yet even the success of Reaganomics and Thatcherism has been very limited.[4] The countries of the political East, which with their devotion to socialism have found themselves lagging farther and farther behind the capitalist world, are now making efforts to increase the efficiency of their economies. For the Soviet Union, the need for reform is particularly pressing. Without improving its economic performance, the Soviet Union cannot hope to retain her status as a military superpower. As they attempt to improve the efficiency of their economies, the Eastern bloc countries cannot avoid introducing more freedom as well. However, the final outcomes of recent developments in the USSR and in China remain an open question.

The continuing growth of government is alarming because of the loss of individual freedoms that inevitably follow such growth. Freedom is primarily a characteristic of an individual's social life; a society is a society of free individuals insofar as it respects the right of the individual to live his own life, to pursue the "happiness" he subjectively values. Classical liberalism has taken a first step toward an explication of that ideal by identifying freedom as the individual's right to noninterference. That is, classical liberalism conceives of freedom as individuals' immunity from coercion—be it coercion by others acting individually or by the state—that is not necessary for securing similar rights of noninterference for all others within the society. But this approach leads to the problem of how to define "necessary coercion" in such a way that the definition offers a clearly objective method for ascertaining which coercive acts of the State are truly necessary and which are not.

This poses a problem that can be solved only by recourse to a theory of rights—in particular, a theory of "option" rights. The more recent use of expressions such as "welfare rights" or "social rights" distorts the word "right" and undermines the idea of what it means to have a right. An option right places an obligation on *all* others not to interfere with that right. By contrast, a so-called "welfare right" is a demand directed to unspecified addressees who may well be unwilling or even incapable of meeting the demand.

The approach of classical liberals like John Locke, William Blackstone, Adam Smith, and Friedrich von Hayek to the problems of social order explicitly faces the value issue. By contrast, contract theory, by attempting to sidestep the value issue, camouflages it. The key tenet of the latter approach is the contrary-to-fact statement that there is a social contract proposal so that

[4]See Milton Friedman, "Has Liberalism Failed?" In Martin J. Anderson, ed., *The Unfinished Agenda* (London: Institute of Economic Affairs, 1986), pp. 127–39.

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rational agents who have examined the proposal would, after having engaged in a cost-benefit analysis, conclude that it is rational to accept the proposal. That tenet is not falsifiable, however; it does not contain any empirical information.

Having to some extent clarified the aim of contemporary classical liberalism as attempting to reverse the current trend toward growth of government, we can proceed to search for appropriate means to that end. The means that first come to mind are, of course, constitutional limitations. It is relatively easy in principle to state the two key ideas of a Constitution of Liberty. (1) Minimize the domain of collective choice. This will at the same time reduce the temptation to refer matters to the political process in an effort to further one's own interests. That is, limiting the range of collective decisions will reduce the incentives to invest in the political process (the negative sum social games) rather than in private productive activities (the positive sum social games). (2) In the domain of collective choice that is unavoidable, make use of the democratic methods that are most compatible with the aims of a free society. As already mentioned, there are a variety of democratic methods, and their relative merits can be appraised only after a systematic performance comparison. A proposal that lies close at hand is making the right to vote dependent on qualities that are relevant to the collective decision that is to be made. This proposal, however, is difficult to make operational when the collective decision concerns only the delegation of rights to certain selected individuals. Nonetheless, a general requirement that suggests itself is that the voters have "sufficient" experience of life. Such experience can come only from having, for some period of time, engaged in some productive activity, that is, from having participated in the positive sum social game characteristic of a society based on the division of labor.

The practical task is how to make a Constitution of Liberty into a *living* constitution. Again the solution, in principle, lies close at hand. We need to create a clientele whose interests are to return to and to preserve limited government. But how do we create such a clientele? One necessary condition for developing the necessary incentives to attempt to reduce the growth of government is an understanding both of the functioning of an economy and of a political order. Hence, an important part of the task is educating the general public, in particular the younger generation who must carry the torch of freedom. That sufficient demand for a public good like national defense can be created on a voluntary basis may appear counterintuitive. Yet Jasay's game-theoretical arguments are impeccable. Jasay's two books are choice examples of the successful application of the economic approach and of game-theoretical arguments in political science and political philosophy. They bring a breath of fresh air to both fields, and they make an important contribution to the educational task.

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Private Money: The Path to Monetary Stability
Kevin Dowd
London: The Institute of Economic Affairs, 1988, 66 pp.

Is there anything inherently special about what we call "money" that dictates its supply should be provided by a monopolist? Kevin Dowd, a lecturer in economics at the University of Nottingham in England, addresses this question by utilizing a Public Choice framework to analyze monetary policy. He concludes unambiguously that the answer is "no." Once government is involved in note issue, political and bureaucratic interests inevitably overwhelm any public-interest motivations on the part of policymakers. Therefore, the best course of action would be to abolish central banks and introduce a system of "free banking."

Dowd begins his analysis with a discussion of the virtues of competition, invoking the "invisible hand" arguments of Adam Smith. Dowd then argues that money is no different from other commodities, and thus consumers should be allowed to enjoy the benefits of unfettered competition in its supply. Indeed, Dowd puts the burden of proof on supporters of central banking to identify what is different about money that its issuer should be granted monopoly powers.

Next, Dowd describes how a free banking system would operate. The controversy over free banking rests on two concerns: (1) whether there are methods available to prevent the over-issue of bank notes; and (2) whether the banking system can protect itself against destabilizing runs—in short, whether a private lender of last resort would emerge.

In a free banking environment, protection against over–issue of notes is provided either by private citizens or by private clearinghouses. The ability to return notes to the issuing institution for redemption effectively disciplines banks in their note-issuing activity. However, once monopoly power is granted in note-issue and inconvertibility is introduced, this discipline breaks down. Notes in such a world cannot be returned to the (single) issuer. The equilibrating mechanism in the money market is then an increase in the price level. Evidence of these propositions is provided by contrasting the early 19th-century free banking system in Scotland with the monopoly control exercised by the Bank of England. Note issues were relatively stable in Scotland, while over-issues resulted in a series of acute crises during the same time period in England.[1]

The emergence of private clearinghouses addresses the second concern about free banking. In the spirit of Richard Timberlake and Gary Gorton, Dowd describes how in several instances private clearinghouses effectively

[1]See Lawrence H. White, *Free Banking in Britain: Theory, Experience, and Debate, 1800–1845* (Cambridge: Cambridge University Press, 1984) and George A. Selgin, *The Theory of Free Banking: Money Supply under Competitive Note Issue* (Towota, N.J.: Roman and Littlefield, 1988).

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acted as lenders of last resort in response to banking panics.[2] Further, these clearinghouse arrangements are superior to a government-sponsored central bank because the former are not subject to the political constraints under which the government-run bank operates. The clearinghouses' essential task is to distinguish between sound and unsound banks, and it is in their self-interest to do this. Dowd is careful to point out, however, that the clearinghouses will not prevent *all* bank runs. Some runs actually can serve a *useful* function. Extensive depositor withdrawals put unsound banks out of business. Dowd argues that runs generally are not contagious and that when they do occur, they seldom spread beyond one bank or a related group of banks. In such situations, depositors would not hoard their funds, but instead would transfer them to other banks that are believed to be safe. So, rather than a contagious loss of deposits to the banking system as a whole, runs generally involve a transfer of deposits from one bank to another.

Restrictions imposed on banks under most central banking systems actually *increase* the vulnerability of the financial system to panics. Bureaucratic procedures and judgments, along with political influences, ultimately replace the conventions and the predictability of the clearinghouses. Dowd provides a very interesting discussion of the political factors involved in central banking along the lines suggested by Edward Kane's "scapegoat" hypothesis.[3]

After highlighting the mechanics of a free banking system, Dowd turns his attention to the role of the monetary standard in such a system. Dowd provides an excellent history and explanation of the role of a monetary standard, tracing its evolution from a commodity-based system to a fiat regime. Government intervention in the monetary system springs primarily from a desire to raise revenue. Here Dowd provides an illuminating discussion of the interplay of political coalitions in determining the outcomes of monetary policy. The focus is on the benefits and costs associated with an inflationary policy along with consideration by the central bank of the reputational constraints under which it operates.

The final section deals with proposals for reform. Nothing less is called for than a change in the institutional environment. In line with this recommendation, Dowd examines and rejects alternative proposals, such as membership in the European Monetary System or calls for a European contral bank. Dowd's reform measures include (1) deregulation, by which he means an end to the power of central banks to impose reserve requirements, capital adequacy ratios, credit limits, and so forth; (2) placing the monetary standard beyond political control by redefining the standard in terms of a particular commodity or basket of commodities; and (3) abolishing the Bank of England,

[2]See Richard H. Timberlake, "The Central Banking Role of Clearinghouse Associations," *Journal of Money, Credit, and Banking* 16 (February 1984): 1–15, and Gary Gorton, "Clearinghouses and the Origin of Central Banking in the United States," *Journal of Economic History* 45 (June 1985): 227–83.

[3]Edward J. Kane, "Politics and Fed Policymaking: The More Things Change the More They Remain the Same," *Journal of Monetary Economics* 6 (April 1980): 199–211.

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and presumably all central banks, as they would have no useful role to play in Dowd's world.

Questions and concerns persist, however, about potential spillovers from unanticipated runs on unsound banks to sound banks and the additional failures they could precipitate. Dowd's analysis would be strengthened by acknowledging the potential impact of unwanted spillover effects on sound banks from runs on unsound banks. Recent work by George Kaufman and by Art Rolnick and Warren Weber on bank runs provides insights into the characteristics of panics and on the relative importance of contagious runs in U.S. banking history.[4]

Dowd points to examples of runs experienced in Texas and Alberta that failed to spread. It seems unwise, however, to make use of the current experience with bank runs to draw conclusions for a system of free banking. The institutional framework that currently exists, as Dowd acknowledges, is far different from what would exist in a world of private money.

Also, to provide a more complete description of the U.S. experience with free banking, some mention could be made of the presence of so-called "wildcat" banks. While their role in the free banking era is a subject of debate,[5] some of these banks undertook note issues in far greater volumes than they could hope to redeem over a sustained period. They thus presented a problem in some states during this time period.

Finally, given the current asset quality problems that plague a number of banks, Dowd would strengthen his arguments by including a discussion of the transition costs that would be entailed in the move toward a free banking environment.

In our view, current difficulties are the result of the interplay of economic, regulatory, and managerial factors. A downturn in economic activity, coupled with a regulatory framework that encourages management to adopt a high-risk profile has resulted in widespread financial distress. Dowd forcefully points out the dangers of partial deregulation. Nowhere is this more evident than in deregulating bank activities while leaving in place the current system of Federal deposit insurance with its subsidies for risk taking. Given current difficulties, fundamental reform is called for.

The focus of Dowd's book, *Private Money*, is primarily on the U.K. monetary system, but it also offers excellent reading material for undergraduate money and banking courses here in the United States. It is quite accessible to the layman as well. Dowd's study should inspire some rethinking on the

[4]See George G. Kaufman, "Bank Runs: Causes, Benefits, and Costs," *Cato Journal* 7 (Winter 1988): 559–85; Arthur J. Rolnick and Warren E. Weber, "New Evidence on the Free Banking Era," *American Economic Review* 73 (December 1983: 1080–91; and idem, "The Causes of Free Banking Failures,"*Journal of Monetary Economics* 15 (November 1984): 267–91.

[5]See Hugh Rockoff, "The Free Banking Era: A Reexamination," *Journal of Money, Credit, and Banking* 6 (May 1974): 141–67, and Rolnick and Weber, "The Causes of Free Banking Failures."

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part of those for whom the answer to the question, "Is money inherently different?" is unambiguously "yes."

Genie Short
Kenneth J. Robinson
Federal Reserve Bank of Dallas[6]

Public Policy Toward Corporate Takeovers
Murray L. Weidenbaum and Kenneth W. Chilton, eds.
New Brunswick, N.J.: Transaction Books, 1988, 176 pp.

Corporate takeovers is one of those topics that some people can get very excited about. In fact, the more people seem to know about takeovers, the more excited, or even exercised, they seem to get, regardless of which side they are on. There are few of what we might call balanced views on the topic. This is what makes Murray Weidenbaum and Kenneth Chilton's book an especially important contribution: It is thoughtful and fair, both in the discussion of the issues and in its policy recommendations. Though essentially pro-takeover, Weidenbaum and Chilton bravely face the facts that raise doubts about where the wealth gains in takeovers come from. This is a useful book for any nontechnician who is interested in the topic—from economists who work outside the field of corporate governance, to policy makers, to concerned citizens who wish to be better informed.

Weidenbaum and Chilton give everyone a day in court. Representing the most pro-takeover contingent is T. Boone Pickens, who makes his living by searching out and bidding for undervalued firms. At the other extreme, but inherently more scientific, are David Ravenscraft and Frederic Scherer, whose work on the earnings of firms merged through takeovers represents solid evidence that sheds doubt on the source and nature of the increased value that results from takeovers.

The book begins by reviewing the economics literature on takeovers, including some helpful background on the functioning of the stock market generally. The single most important and oft-cited fact is that the stockholders of the target firms in successful tender offers make, on average, more than a 30 percent return on the deal. The bidder firm stockholders, however, have average returns from the deal that are very close to zero.

Where do these profits come from? One's answer to this question will usually determine one's opinion on the value of takeovers. There are several hypotheses.

First, the profits may arise from efficiency gains resulting from improved management by the new owner/managers. This argument will often include discussions of how financial restructurings result in incentives that elicit better performance from managers. For example, if the new owners own

[6]The views expressed in this review should not be attributed to the Federal Reserve Bank of Dallas or the Federal Reserve System.

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more stock in the company than the previous owners did, their interests are more closely aligned with those of the stockholders.

Second, the shareholders' profits may be someone else's loss. There are a number of potential sources. The most likely is other taxpayers. In many takeovers, and also in leveraged buyouts, a substantial amount of debt is issued and used to buy equity. Interest on corporate debt is deductible on a corporate tax return and consequently is taxed only at the individual level. Thus, interest on debt is taxed only once, whereas the shareholders' earnings are taxed twice—once at the corporate level and again when the earnings are paid out as dividends. If a firm has not fully exploited the tax advantages of debt, income taxes can be lowered and share value increased by issuing more debt. The shareholders' gain is a loss for the rest of the taxpayers.

When a large amount of new debt is issued, the holders of both firms' previously issued debt may suffer. If the new debt increases the likelihood of bankruptcy and weakens the claim of the old debtholders on the firms' assets, the value of the old debt falls. The magnitude of this loss appears to be small, but the potential for exploitation is there. Yet another set of losers may be unionized employees, or employees whose "excess" pension fund monies are used to pay for the takeover. So there are at least three groups from whom resources may be redistributed during a takeover—other taxpayers, existing creditors, and employees.

If behavior is any indication, it appears that those who stand to lose the most from a takeover are the managers of the target firm. They are the ones who spend the shareholders' money fighting the tender offer, lobbying for state laws to make takeovers more difficult, and changing their own corporate charters to block takeovers. This in itself is circumstantial evidence that the first hypothesis—efficiency gains from improved incentives—may be right. These managers are supposed to be working for the shareholders and taking the shareholders' interests to heart. While some management resistance to a tender offer can be justified as an effort to bid up the price, ultimately incumbent managers should accede to the offer and allow the shareholders to collect their 30 percent gains. Managers who kill a tender offer, regardless of the source of its value, are not serving their shareholders.

Finally, the increase in share price may result from simply replacing pessimistic equityholders with debtholders. If shareholders have an array of opinions about the future fortunes of the firm, it is the least optimistic who will sell when the price rises. The shareholders who are left are, by definition, those who believe the stock is worth even more than the tender offer price. It may not matter that reams of research indicate there is no publicly available information to support such beliefs. Not everyone is convinced by such research.

If the source of wealth gain is either redistribution or the displacement of pessimistic shareholders, then there is no reason to expect earnings to rise after the merger. But if efficiency gains are the source of the increased value, those gains ought to be manifested somewhere down the road in increased earnings for the merged firm. The best written paper in the volume is the

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one by Ravenscraft and Scherer. After adjusting for all necessary factors, these authors make the case that no increase in earnings materialize. Since the biggest adjustment made by Ravenscraft and Scherer to the income statement data of merged firms involves interest on new debt, their work suggests that the largest redistribution is indeed from the taxpayers to the equityholders. No other research on takeovers has been able to identify another source for redistribution—neither from bondholders nor from employees—that has anywhere near the potential increase in value as that resulting from increased debt. Along with the high post-merger divorce rate of 40 percent, this evidence is troublesome even for the supporters of takeovers.

Another source of concern is the increased levels of corporate debt that accompany most takeovers. With so many firms carrying heavier debt burdens, the economy is arguably more vulnerable. In a recession more firms will be threatened with bankruptcy, and bankruptcy is a costly process. But as many individuals commenting on this issue point out, the straightforward solution to this potential problem is not to limit takeovers. Rather, the tax law should be changed to eliminate its bias for debt financing, not just for takeovers, but for all transactions.

Another major issue in takeovers is the means that incumbent managers use to thwart takeover attempts. Even the names for these ploys summon visions of illegal warfare—shark repellants, poison pills, greenmail, and the dreaded supermajority charter amendment. These are the issues that inflame the likes of T. Boone Pickens and his United Shareholders of America.

Weidenbaum himself writes about these matters, again with admirable reserve. As he believes we need little in the way of legislation to inhibit takeovers, he also believes that corporate constitutions will right themselves to protect shareholders, and in some cases Weidenbaum argues, they already have. In conclusion, Wiedenbaum would rather trust the market than the legislature to make the appropriate modifications.

The reader who wishes to understand the issues in corporate takeovers from the point of view of both sides in the controversy would do very well to acquire and read the Weidenbaum and Chilton book.

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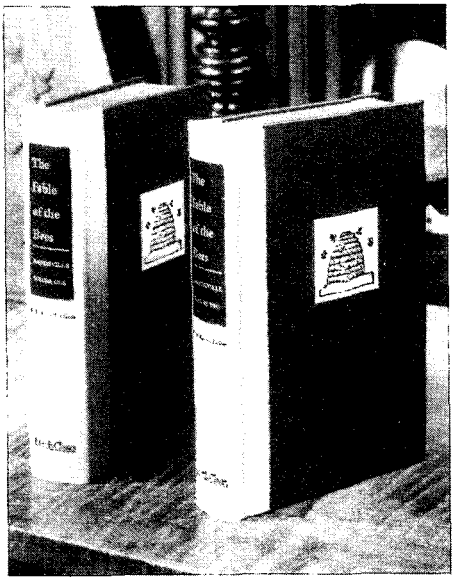

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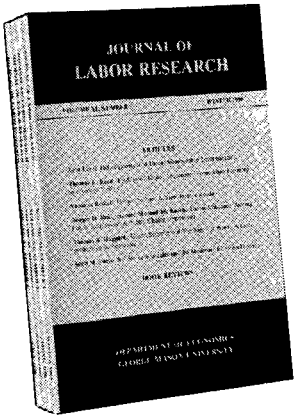

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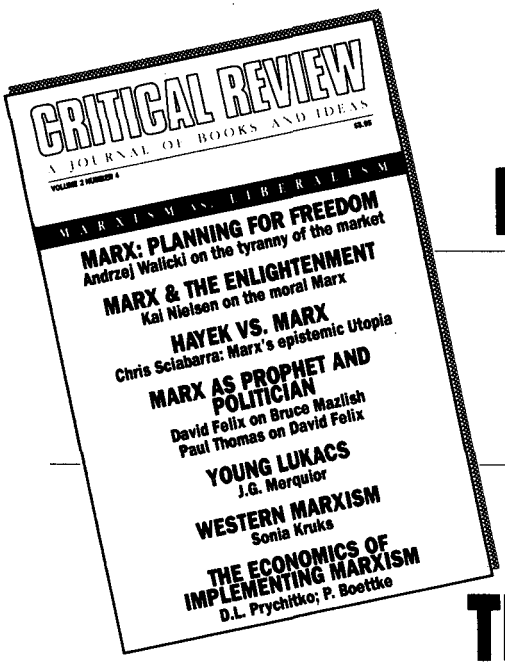
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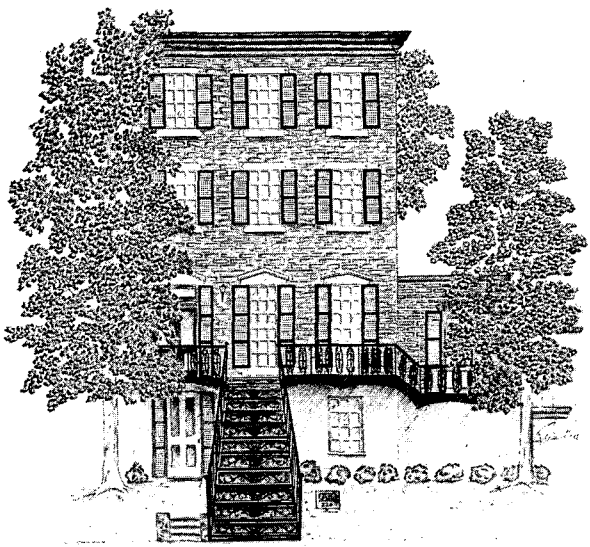

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ON THE ILL-FOUNDED JEALOUSY OF TRADE

Nothing is more usual, among states which have made some advances in commerce, than to look on the progress of their neighbors with a suspicious eye, to consider all trading states as their rivals, and to suppose that it is impossible for any of them to flourish, but at their expence. In opposition to this narrow and malignant opinion, I will venture to assert, that the encrease of riches and commerce in any one nation, instead of hurting, commonly promotes the riches and commerce of all its neighbors; and that a state can scarcely carry its trade and industry very far, where all the surrounding states are buried in ignorance, sloth, and barbarism.

—David Hume

"Of the Jealousy of Trade." 1777.
Reprinted in *Essays: Moral, Political, and Literary*, pp. 327–28.
Edited by Eugene F. Miller. Indianapolis: Liberty Classics, 1985.

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